

Blackwell Handbook of Social Psychology: Group Processes

*Michael A. Hogg
R. Scott Tindale*

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**Blackwell Handbook of Social Psychology:
Group Processes**



Blackwell Handbook of Social Psychology

This authoritative handbook draws together 25–30 newly commissioned chapters in each of the four volumes to provide a comprehensive overview of specific topics in the field of social psychology. Designed to have considerable depth as well as breadth, the volumes encompass theory and research at the intraindividual, interpersonal, intergroup, and group levels. Editors have been chosen for their expertise and knowledge of the subject, making the *Blackwell Handbook of Social Psychology* an invaluable companion for any serious social psychology scholar.

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Interpersonal Processes, edited by Garth J. O. Fletcher and Margaret S. Clark

Intergroup Processes, edited by Rupert Brown and Samuel L. Gaertner

Group Processes, edited by Michael A. Hogg and R. Scott Tindale

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Edited by

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Series Editors' Preface

The Blackwell Handbook of Social Psychology

The idea for a new, international handbook series for social psychology was conceived in July 1996 during the triannual meeting of the European Association of Experimental Social Psychology (EAESP) in the idyllic setting of Gmunden, Austria. Over a glass of wine and pleasant breezes from the Traunsee, Alison Mudditt (then Psychology Editor for Blackwell Publishers) engaged the two of us in a “hypothetical” discussion of what a multi-volume handbook of social psychology at the start of the 21st century might look like. By the second glass of wine we were hooked, and the project that has culminated in the publication of this four-volume *Blackwell Handbook of Social Psychology* was commissioned.

The EAESP meeting provided a fitting setting for the origin of a project that was intended to be an international collaborative effort. The idea was to produce a set of volumes that would provide a rich picture of social psychology at the start of the new millennium – a cross-section of the field that would be both comprehensive and forward-looking. In conceiving an organizational framework for such a venture, we sought to go beyond a simple topical structure for the content of the volumes in order to reflect more closely the complex pattern of cross-cutting theoretical perspectives and research agendas that comprise social psychology as a dynamic enterprise. Rather than lengthy review papers covering a large domain of social psychological research, we felt that a larger number of shorter and more focused chapters would better reflect the diversity and the synergies representative of the field at this point in time.

The idea we developed was to represent the discipline in a kind of matrix structure, crossing levels of analysis with topics, processes, and functions that recur at all of these levels in social psychological theory and research. Taking inspiration from Willem Doise's 1986 book (*Levels of Explanation in Social Psychology*) four levels of analysis – intrapersonal, interpersonal, intragroup, and intergroup – provided the basis for organizing the Handbook series into four volumes. The content of each volume would

be selected on the basis of cross-cutting themes represented by basic processes of social cognition, attribution, social motivation, affect and emotion, social influence, social comparison, self and identity, as they operate at each level. In addition, each volume would include methodological issues and areas of applied or policy-relevant research related to social psychological research at that level of analysis.

Armed with this rough organizational framework as our vision for the series, our role was to commission editors for the individual volumes who would take on the challenging task of turning this vision into reality. The plan was to recruit two experts for each volume who would bring different but complementary perspectives and experience to the subject matter to work together to plan, commission, and edit 25–30 papers that would be representative of current and exciting work within their broad domain. Once selected, co-editors were encouraged to use the matrix framework as a heuristic device to plan the coverage of their volume but were free to select from and embellish upon that structure to fit their own vision of the field and its current directions.

We have been extremely fortunate in having persuaded eight exceptionally qualified and dedicated scholars of social psychology to join us in this enterprise and take on the real work of making this Handbook series happen. Once they came on board, our role became an easy one: just relax and observe as the project was brought to fruition in capable hands. We are deeply indebted and grateful to Abraham Tesser and Norbert Schwarz, Margaret Clark and Garth Fletcher, Michael Hogg and Scott Tindale, Rupert Brown and Samuel Gaertner for their creative leadership in producing the four volumes of this series. Through their efforts, a rough outline has become a richly textured portrait of social psychology at the threshold of the 21st century.

In addition to the efforts of our volume editors and contributors, we are grateful to the editorial staff at Blackwell who have seen this project through from its inception. The project owes a great deal to Alison Mudditt who first inspired it. When Alison went on to new ventures in the publishing world, Martin Davies took over as our capable and dedicated Commissioning Editor who provided guidance and oversight throughout the operational phases. Our thanks to everyone who has been a part of this exciting collaborative venture.

Miles Hewstone
Marilynn Brewer

Preface

“A whole volume on groups? One-fourth of the entire *Handbook*? In social psychology? Well it’s about time!” Such was our shared reaction when asked to edit the present volume of the *Blackwell Handbook of Social Psychology*. There was a time in the history of social psychology when such a response would have been out of place. Much of the early work on human social behavior focused on groups. In fact, the earliest empirical undertaking in the field was concerned with why people perform differently in groups, as compared to alone (Triplet, 1898). The key aspects that defined the field were group concepts: social facilitation and inhibition, norms, roles, group cohesiveness, social comparison, social interaction, etc. Even attitudes – often defined as individual-level phenomena – were studied in a group context (Lewin, 1943). Thus, a heavy emphasis on groups in a handbook of social psychology would have been (and in fact was) the norm (see Lindzey, 1954; Lindzey & Aronson, 1969).

However, by the late 1960s and early 1970s, the group began to lose its central position in the field. And by the mid-1980s, the notion of groups as a central focus in the field had all but evaporated – so much so that the 3rd edition of the Lindzey and Aronson (1985) handbook had but one chapter with the word “group” in the title, and that one focused on inter- rather than intragroup phenomena (Stephan, 1985). The decline of group research in social psychology has been well documented and lamented, and the reasons for the decline have been discussed and debated at length (see Abrams & Hogg, 1998; Davis, 1996; Moreland, Hogg, & Hains, 1994; Steiner, 1974; 1986; Tindale & Anderson, 1998). However, recent reviews have also noted a resurgence in group research – both in terms of intergroup (Moreland et al., 1994) and intragroup (Sanna & Parks, 1997) behavior. Although not all of this work has been published in the standard social psychology outlets, much of it is still performed by researchers trained in social psychology. Thus, it seems quite appropriate to us that separate volumes of the present four-volume *Handbook* have been devoted to intragroup (the current volume) and intergroup (the volume edited by Brown & Gaertner) processes. However, it is actually quite difficult and probably unwise to study intragroup processes in isolation from the intergroup

context in which groups exist – and so, many of the chapters in this volume quite naturally place a strong emphasis on intergroup aspects of processes within groups.

Although one could justify dedicating an entire volume to intragroup processes based on increased quantity of research in the field, we feel the true justification stems more from recent reconceptualizations that have in part fueled the resurgence. Part of the decline of group research in social psychology can be attributed to the cognitive revolution in psychology in general. Since cognitions were seen as contained within the individual, the important questions seemed to be at the individual level. However, more recent attempts at explaining human cognition have begun to realize that often cognitions are social in nature. The idea that cognition is not simply a mapping of physical reality to mental representation, but is often defined by social consensus once again places the group as social context into an important role (Resnick, Levine, & Teasley, 1991). The social nature of our thoughts, beliefs, even memories, has had important implications for what we mean by the notion of cognition, and the reasons why so many of them are shared among people in common social environments (Farr & Moscovici, 1984; Nowak, Szamrej, & Latane, 1990). Thus, as cognitions have taken on a more social definition, groups have become a more reasonable place to study them.

A related shift in conceptualization involves the notion of the self. Prior to the 1970s, most social psychological research was performed in the United States. As is now known, the United States is a relatively individualistic culture. Thus, social psychological definitions of the self were individualistic as well. However, research on intergroup relations by Tajfel, Turner, and their associates (see Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) demonstrated that self-definitions are largely social and shift depending on the social/group context. In addition, cross-cultural research (Markus & Kitayama, 1991; Triandis, 1989) has shown that the self-concept in many cultures is more collectivist than individualistic. For people in those cultures, the most important ingroup plays a central role in defining the self. Once again, this shift in conceptualization has placed the group in a more central position for understanding social behavior.

The present volume reflects both of the aforementioned trends as well as more standard issues associated with behavior in and by groups. Consistent with the other three volumes in the *Handbook*, we sought contributors who spanned international boundaries and theoretical perspectives. Given that groups have taken on a more central role in social psychological thinking, it was easy to find prominent scholars with a group perspective for each of the fundamental social psychological processes used to organize the entire project (cognition, motivation, emotion/affect, etc.). The difficult part was deciding who we would, unfortunately, not be able to include from our original long list of leading scholars. Space constraints forced us to exclude many excellent group researchers. However, the current list contains many of the most notable and active researchers in the field of group research and comprehensively covers the major topics of the field.

The general organization of the volume follows the framework originally devised for the entire *Handbook*, and revolves around basic social psychological processes: cognition and cognitive processes, social motivation, affect/emotion, social influence, attribution, social comparison, and self and identity. Although each chapter was chosen based on this list of processes, many if not all of the chapters can readily be cross-listed and many could just as readily be relocated under a different “process.” In addition, the volume includes

chapters on methods and on applications. There is also a chapter on cross-cultural issues. Because of the cost associated with studying groups as the unit of analysis, rarely are groups in different cultures directly compared, although each of the chapters discusses what we do know about culture and groups within specific domains. However, in general, there is a need for research on groups outside of the confines of Western, industrialized societies.

The opening section on cognition in groups flows nicely from the recent conceptualizations discussed above. Tindale, Meisenhelder, Dykema-Engblade, and Hogg's chapter (Chapter 1) focuses on *socially shared cognitions* and how this "sharedness" is important for understanding not only the cognitions of group members but also group performance and process in general. The notion of shared cognition resurfaces in a different form in Chapter 13, where Lorenzi-Cioldi and Clémence describe the wider social processes that produce and maintain social representations, and the consequences of such representations for social conduct.

Stemming from the other social trend in cognition represented by social identity/self-categorization processes, Hogg (Chapter 3) discusses the implications of social categorization and depersonalization for intragroup processes, showing how such ideas inform standard group research areas such as cohesiveness, leadership, and organizational effectiveness. This chapter describes the social identity perspective and its contribution to our understanding of processes within groups. The social identity theme is also pursued in Chapter 18, by Abrams and Hogg, but here the emphasis is on the collective self-concept and on the presentation of self in different social/group contexts. Marques, Abrams, Paez, and Hogg (Chapter 17) also adopt a social identity perspective to analyze people's reactions to and treatment of deviant members of their group. Darley's chapter (Chapter 14) takes a different perspective on deviance – as part of a general discussion of social comparison processes, the emphasis is on the ways in which groups try to include deviant members or people who do not fit the defining membership characteristics very well.

Returning to Chapter 2, Stasser and Dietz-Uhler continue the cognitive theme of Chapter 1. They discuss theory and research on group performance on cognitive tasks (decision making and problem solving), with a special emphasis on the development of mathematical and computer formalizations of groups and what we have learned from such endeavors. Group performance is also dependent upon motivation. Kerr and Park (Chapter 5) discuss group performance in both collaborative and social dilemma situations from a motivational perspective. Using some standard motivational models (instrumentality – value, self-efficacy), they provide novel explanations for both classic and more recent research findings while showing that motivation can be gained as well as lost in groups.

Motivation to join groups and to remain a member, and motivation for groups to recruit and retain members are important constructs in group socialization theory. Levine, Moreland, and Choi discuss group socialization in Chapter 4. Taking a slightly different tack, but still emphasizing the temporal dimension of group life, Worchel and Coutant (Chapter 19) discuss how different types of group and individual identities interrelate in group contexts. This discussion invokes the notion of roles, which is discussed in detail by Ridgeway in Chapter 15 – the status characteristics of particular roles are seen to be important determinants of influence within groups.

The idea of there being different roles within groups and that roles vary in how much power to influence is attached to them leads us in two directions. First the study of leadership. Chemers (Chapter 16) and Lord, Brown, and Harvey (Chapter 12) discuss leadership, both emphasizing that leadership is a group process. Chemers provides an integrative review, whereas Lord and his colleagues focus upon a new connectionist model of leadership in groups. The other direction is the study of influence, conformity, and normative conduct. Cooper, Kelly, and Weaver (Chapter 11) discuss how attitudes are related to norms through the context of groups, and generally review attitude change and attitude-behavior research from this group perspective. Martin and Hewstone (Chapter 9) provide a detailed and comprehensive discussion of how majorities and minorities can influence people – a particular emphasis is placed on the process of minority influence that is often considered to be the vehicle of social change. The idea of social change is explored further by Reicher (Chapter 8) who provides a wide-ranging analysis of crowd behavior. Far from being an irrational aggregate of deindividuated souls, Reicher considers the crowd to have a tight logic that is tied to the identity of the crowd. Crowd behavior is often a manifestation of collective protest or collective identity expression, and is often closely tied to the pursuit of social change. The final social influence chapter is by Latané and Bourgeois (Chapter 10). Latané and Bourgeois describe dynamic social impact theory which is a detailed and fine-grained analysis of the power (and limit) of numbers to gain influence. They show how particular distributions of people with varying impact can produce stable group arrangements that are more or less diverse or homogenous.

Although cognition and motivation have received a fair amount of attention in group research, affect and emotion, until recently, have received little if any. However, as has been demonstrated at the individual level, cognition and emotion are intricately entwined and it is difficult to understand one without the other – a fact that is beginning to impact research at the group level as well. Thompson, Medvec, Seiden, and Kopelman (Chapter 6) focus on the role of emotional expression in bargaining and negotiating. By discussing three different myths available as prescriptions for effective negotiation, they demonstrate both the complex role that emotion may play and describe the variables that may moderate the degree to which each myth holds some truth. Kelly (Chapter 7) describes what theory and research is available on emotion/affect and small group performance, and points out the importance of thinking about mood as both an individual and group-level phenomenon. She also points out a number of areas ripe for future research attention.

The last set of chapters focuses on cultural influences, methodological issues and innovations, and on how group research has been used for, and developed through, various applications. Carnevale and Leung (Chapter 20) place the self center-stage in their analysis of the impact of culture on negotiation and other mixed motive situations. McGrath and Altermatt (Chapter 22) describe both classic and recent developments in techniques for observing and analyzing group interaction. Sadler and Judd (Chapter 21) provide the basis for, and a variety of examples of, techniques that allow variance due to group-level phenomena to be differentiated from variance attributed to differences between individuals. And much like most other aspects of human behavior, groups are also changing as a function of technology. Hollingshead (Chapter 23) discusses how technology both has

changed and is changing the way we think about and study groups, and how the very definition of what a group is has been altered by recent technological innovations.

In terms of applications, one of the major areas where group research has had an impact on society is in relation to juries and legal decision making. Indeed, this area of group research continued to flourish even during the general decline of group research in the 1970s and 80s. It is an area which has helped to understand what factors impact a jury's ability to render justice. Tindale, Nadler, Krebel, and Davis (Chapter 24) focus on just such questions from a procedural perspective. Probably the applied area that has meant more for the resurgence of groups than any other is team performance in organizations. Taking a dynamical systems approach, McGrath and Argote (Chapter 25) discuss recent trends in research on groups in organizations and show the necessity for a dynamic, multi-leveled research agenda for understanding how groups function in an organizational context. Finally, Forsyth (Chapter 26) reviews the extensive role that groups have played in mental health care, both discussing what we currently know and making a plea for greater rigor and diversity in future research endeavors.

Bringing together such a diverse set of authors, ideas, and research agendas into a single volume has been both challenging and inspiring. We would like to express our deepest appreciation to all of the authors, for it was their efforts and insights that made the volume what it is. We would also like to thank the series editors and the publishers for their continued support and help along the way. We hope that this volume will show how valuable the group perspective is to both social psychology and our understanding of human behavior in general. This volume will both close the first century of group research and set the agenda for the next. We hope the ideas set forth in these chapters will provide both a strong foundation and a clear vision for the promising future research that is sure to come.

Michael A. Hogg and R. Scott Tindale
Brisbane and Chicago, June 2000

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CHAPTER ONE

Shared Cognition in Small Groups

**R. Scott Tindale, Helen M. Meisenhelder,
Amanda A. Dykema-Engblade, and Michael A. Hogg**

Two of the earliest texts in social psychology were Le Bon's (1896/1960) *Psychologie des Foules* (*Psychology of Crowds*) and McDougall's (1920) *The Group Mind*. Both espoused as a central tenet the view that behavior in social aggregates was not simply a function of some combination of individual acts. Rather, they saw social behavior as being guided by forces defined by the aggregate – a “collective consciousness” or “group mind” – that could not be understood fully by simply understanding individual behavior or individual minds. Such ideas were not unusual for the times. Durkheim (1893/1984, 1965), Mead (1934) and other sociologists and social philosophers also saw collective or shared meaning as an integral component for understanding social behavior (see Farr, 1996). However, with the onset of behaviorism, psychology's focus moved almost exclusively onto the individual, and the notion of collective thought and meaning fell out of favor (Allport, 1924). In mainstream social psychology, focus on aggregates versus individuals has waxed and waned (see Steiner, 1974, 1986; Moreland, Hogg, & Hains, 1994 for reviews), but the key explanatory variables have remained mainly at the individual level. Thus, in recent social psychology textbooks, the early ideas concerning “collective cognition” are rarely mentioned except for historical context, if they are mentioned at all (e.g., Baron & Byrne, 2000).

However, social psychology has seen a recent resurgence of the notion of cognition at the level of the collective, typically referred to as “socially shared cognitions” (Resnik, Levine, & Teasley, 1991; Thompson & Fine, 1999). This resurgence has developed from

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a number of different directions. Probably the most central influence has been European social psychology, through the writings of Henri Tajfel and his colleagues (Tajfel & Turner, 1979, Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Hogg & Abrams, 1988; see Abrams & Hogg, this volume, chapter 18; Hogg, this volume, chapter 3; Reicher, this volume, chapter 8). Tajfel's social identity theory placed the group front and center stage for understanding a number of aspects of behavior. These ideas eventually influenced theory and research in most of the major areas of the field: person perception, stereotyping, prejudice, attribution, attitudes, self-concept, and so forth (see Abrams & Hogg, 1999 for recent summaries in each of these areas), as well as work on small groups (Hogg, 1996). Another European influence that promoted the notion of shared thoughts and beliefs was Moscovici's (1984) notion of "social representations" (see Lorenzi-Cioldi & Cl  mence, this volume, chapter 13). Drawing on Durkheim's (1965) notion of "collective representations," Moscovici argued that collectives rely on shared images and ideas to form the basis of "common sense." These shared meanings then become the cognitive context within which members of the collective communicate and coordinate their actions. Similar ideas have more recently been developed by Bar-Tal (1990) in relation to group beliefs and their impact on individual and collective behavior.

Another major influence on the shared cognitions approach came from theory and research on organizations (Thompson, Levine, & Messick, 1999). Theorists such as Weick (1979) argued that organizations are defined by the process of organizing, which is defined, in part, at the cognitive level. Thus, organizations are defined by the "sense making" and "heedful interrelating" (Weick & Roberts, 1993) that occurs, and the shared cognitions that result. The popularity of work teams in organizations has also spawned a strong research tradition in the study of group performance in organizations (Guzzo & Shea, 1992; Hackman, 1998). Within this tradition, the notion of common understandings (Helmreich, 1997), and shared mental models (Klimoski & Mohammed, 1994; Thompson, 1998) have played significant roles in recent theorizing.

Specifically within the small-group literature in social psychology, probably the biggest influence in moving the field toward a focus on shared cognitions was the "hidden profile" paradigm formulated by Stasser and Titus (1985, 1987; see also Stasser & Dietz-Uhler, this volume, chapter 2). Although this paradigm and its offshoots will be discussed in depth later, the basic finding that shared information in groups plays a much more significant role in group process and performance than does information that is not shared, shattered a number of the prior basic assumptions underlying group research. A number of researchers have followed up on this finding (e.g., Larson, Foster-Fishman, & Keys, 1994; Gigone & Hastie, 1993, 1996), and this body of literature helped to crystallize the idea of groups as information-processing systems (Hinsz, Tindale, & Vollrath, 1997; Larson & Christensen, 1993) with "social sharedness" as an underlying theme (Kameda, Tindale, & Davis, in press; Tindale & Kameda, 2000).

The notion of socially shared cognitions has permeated virtually all areas of social psychology. Thus, a comprehensive review is beyond the scope of the present chapter (see Thompson & Fine, 1999 for a more thorough treatment of socially shared cognitions in general). True to the theme of the present volume, we will focus almost exclusively on intragroup phenomena and how the shared cognitions resurgence has influenced theory

and research on small-group process and performance. The remainder of the chapter is divided into two main sections. The first briefly discusses recent (and not-so-recent) ideas concerning how groups develop shared cognitions. Drawing on traditional (e.g., symbolic interactionism, social comparison, etc.) and more recent (e.g., models of evolution, communication, group identity, and dynamical systems) orientations, we will show that shared cognitions develop naturally in groups, often with little or no effort on the part of the constituent members. The second section discusses the effects that shared cognitions have on groups, in terms of both process and performance. We discuss both recent findings and some reinterpretations of earlier classic findings in the field. Although grounded in some of the earliest work in the field, the shared cognitions framework for studying groups is still evolving. Thus, we close the chapter with a few speculations as to where these ideas may be able to take the field.

How Shared Cognitions Develop

Common experience, learning, social interaction, and social comparison

Obviously, some of the cognitions, beliefs, knowledge, and so forth, that members of social groups share come from their shared experiences with the world around them. Human physiology is mainly constant in terms of how our sensory systems operate, so it is not surprising that we experience things in similar ways. In addition, the laws of physics are constant (at least at the level at which our senses operate) so that we fall *down* when we lose our balance, and feel *pain* when our flesh is exposed to fire, etc. (Although as is argued below, most – if not all – of the *meanings* we attribute to such common experiences are socially mediated.) In addition, all societies/cultures have in place mechanisms for teaching their younger members the shared *truths* as defined by them. Children learn math, science, history, and so forth, in schools or through family elders and are told that these ideas and procedures are both true and relevant. However, instruction and common experience are not the only ways that shared cognitions develop.

Some of the earliest discussions of shared social meanings in psychology and sociology stem from the symbolic interactionist approach (see Farr, 1996; Fine, 1990; Thompson & Fine, 1999). This perspective argued that collective meaning is an essential feature of social life and that social order depends on the subsequent shared interpretations based on those collective meanings. Even the definition of self was seen as dependent on our ability to take on the role of the other. By our ability to see the world through another person's eyes (so to speak), we develop a perspective of our place as an entity in the social environment. Symbolic interactionists contend that socially shared meaning develops through interaction among social actors, and is continually modified by those same interactions. Although the approach does not claim that all individual perspectives on a situation are identical, it does argue that the ability to share perspectives is what allows social interaction to exist in any meaningful way.

Moscovici's (1984) notion of social representation fits nicely with the symbolic interactionist perspective, though he attributes the basis of the idea to Durkheim (1964).

Through interactions with others, we learn what beliefs and attitudes are considered “givens” in our social environment. Thus, social representations are seen as the basis of what is typically referred to as “common sense.” Although some social representations have a physical basis for their existence (e.g., brick walls are hard – don’t pound your fist against them), others are more purely social or cultural in nature (i.e., the Sabbath is a day of rest – do not work on that day). Many of the social representations concerning social groups (e.g., stereotypes) are learned through a combination of social consensus and subsequent experience biased by social perceptions. Although social representations are dynamic – they change over time as both situations and knowledge bases change – they remain the common-sense basis for interpretation and understanding for the people that share them. (See Lorenzi-Cioldi & Clémence, this volume, chapter 13.)

Recent work on the role of communication also shows that simply exchanging information increases the perceived validity of the information (Hardin & Higgins, 1995; Higgins, 1992). Higgins (1992) has argued that part of the rules associated with communication is that the speaker “tunes” his/her message to the recipient so as to improve comprehension. This can often lead to recipients perceiving a greater degree of convergence in meaning than may have been the case. During the continued exchange, both participants gradually shift their perspectives to match what has been communicated. Thus, information that has been shared through communication acquires some validity purely from the sharing. This change in meaning seems to occur even when the communicator intentionally distorts the communication to match expectations concerning the audience (Higgins, 1992). Such ideas are quite consistent with theories of cognitive consistency (Festinger, 1957; Heider, 1958). When we tell someone else that something is true, it becomes truer to us as well.

Another way in which social interaction leads to shared cognitions is through social comparison (Festinger, 1950, 1954). Festinger argued that when physical reality does not provide cues for appropriate behavior or opinion, people use social reality (i.e., the other people around them) as cues for appropriateness. Thus, people compare their behavior, beliefs, attitudes, etc. with those of others around them in order to reduce uncertainty. Although some have argued that in fact all such comparisons are social because our perceptions of physical reality are also heavily socially mediated (Moscovici, 1976), the evidence that social comparisons guide many if not most of our behaviors is well established (see Suls & Wills, 1991; Darley, this volume, chapter 14).

Probably the best empirical example of this process is the work by Sherif (1936) on the development of social norms. Using the perceptual illusion of the autokinetic effect (perceived motion of a stationary light in a darkened room), Sherif had participants in small groups publicly judge how far the light had moved. Within a fairly small number of trials, Sherif found a fairly large degree of convergence among the judgments within the group. Thus, in the absence of any “real” physical cues, group members used the judgments of others to modify their own judgments. Social comparison processes are probably even more prevalent in situations where new members are intentionally trying to “fit in” in a new group or organizational context (Levine & Moreland, 1991, 1999; Levine, Moreland, & Choi, this volume, chapter 4).

Recent ideas on naturally occurring shared cognitions

Latané (1981) formulated a theory of social impact that posited three key aspects of social influence associated with the influence source – strength (e.g., power, persuasiveness), immediacy (physical and/or social distance) and number of influence sources compared to the number of targets. Recently, Latané and colleagues (Nowak, Szamrej, & Latané, 1990; Latané & Bourgeois, this volume, chapter 10) have adapted the theory, using a dynamical systems approach, to incorporate the dynamic and reciprocal nature of social influence. In addition to the assumptions specified above, the dynamic version of the model adds three more. First, it assumes that individuals (varying in strength and other attributes) are distributed in a social space. Where they are located in the space defines their immediacy in terms of other individuals within the space. Second, each individual is influenced by his/her own position (e.g., belief, attitude, preference) and by the other people in proportion to a multiplicative function of their strength, immediacy, and number. Third, a person will change his/her position if and only if the total persuasive impact (the pressure to change to a different position) outweighs the pressure to maintain one's own position (the strength of the initial position plus any supportive impact). Dynamic social impact is then taken to be the cumulative effect of the iterative, recursive influence present during interaction. The model makes no assumptions about intentions of the other people in the social space to influence someone.

Using computer simulations (SITSIM; Nowak & Latané, 1994), Latané and colleagues have discovered a number of consistent findings, which have then been tested in different experimental settings. The most central finding for current concerns is that people tend to cluster in the social space in terms of position similarity. In other words, a random distribution of positions within the space will soon become organized into “belief clusters.” Second, the space will tend to consolidate in such a way that majority positions tend to become stronger (more prevalent) and minority positions weaker. However, unless the initial majority is extremely large, minority clusters remain even after thousands of iterations. Thus, diversity of opinion continues despite the consolidation process. An additional aspect of the simulations shows that people in clusters tend to become similar to each other on multiple issues – what Latané has called correlation. Each of these simulation results have received empirical support in a number of different social aggregates, even in situations where there are few if any reasons for people to change their positions to match those around them (Latané & L'Herrou, 1996). Thus, it appears that shared cognitions are a natural product of even limited social interaction (simply exchanging position information), and they form as a consequence of self-organizing principles of the social system.

Two other recent ideas, born from thinking about social psychology and groups in evolutionary terms, help to elucidate how and why shared cognitions develop. Kameda and Hastie (1999) have run a number of simulations exploring the potential adaptive value of different social decision heuristics or group decision-making strategies. In their work, they assumed that a small band of foragers is to choose one patch or area out of many (10 in their simulations) to search for food/resources. They also assume the patches differ in resource level, and that individuals/groups can only know the resource levels of

different patches stochastically, based on environmental cues (using a Brunswik's lens model framework – Brunswik, 1956; Gigone & Hastie, 1996). They then simulated different group decision strategies and compared them both in terms of necessary computational resources to use the strategy and opportunity costs (resource differences between chosen patch and optimal patch). Although strategies with high computation demands performed best, they found that majority decision processes performed best of the low computations strategies – even better than “best member” (going with the most optimal individual choice) strategies. Research on group decision making has shown that majority processes are quite common (Kameda, Tindale, & Davis, in press) and often lead to post-decision convergence in individual member opinion. Thus, heuristically adaptive group decision strategies can lead to greater opinion sharing in groups.

On a more general scale, Caporael (1997) has argued that human evolution has at its core a social or group component. She argues that the notion of “repeat assembly” can be viewed as operating at many levels, not just in terms of genes. Given that one aspect of the human environment that has probably not changed from early evolutionary history is the social (face-to-face) group, it would not be surprising if a number of individual and group structural characteristics were “repeated,” as part of human evolution, in order to promote the adaptiveness of group life. A full discussion of these ideas is beyond the scope of the present chapter, but one of the key aspects of her “core configurations model” is that “demes” (bands of individuals larger than the single family unit) require and promote a shared reality. In other words, one of the functions of social groups is to promote a shared construction of reality (see Hogg, in press a). The shared reality then allows for behaviors such as group movement, general maintenance of the group, and work group coordination. Shared language and language capabilities play a large role in such shared realities, and thus, these ideas are quite consistent with the aforementioned symbolic interactionist perspective. Another natural function of such social groups is the development of social identity, a topic to which we now turn.

Social identity and self-categorization

The social identity perspective in social psychology is a systematic attempt to develop a model of the social group and of group and intergroup behaviors that rests upon collective self-conceptualization – social identity (e.g., Hogg & Abrams, 1988; Tajfel & Turner, 1979; Turner, 1982; see Hogg, this volume, chapter 3). Developing out of the collectivist and “social dimension” agenda of post-War European social psychology (Tajfel, 1984), the social identity perspective is an integrated theoretical framework that has a number of distinct but compatible conceptual components. It integrates categorization processes (e.g., Tajfel, 1972), social comparison processes (see Hogg, in press b; Turner, 1975), self-enhancement motivation (see Abrams & Hogg, 1988), and people's beliefs about relations between groups (see Tajfel & Turner, 1979), in order to explain intergroup behavior and the collective self/social identity. More recently the categorization process has been more fully elaborated (self-categorization theory: Turner et al., 1987) as has the motivational role of uncertainty reduction (e.g., Hogg, in press c; Hogg & Mullin, 1999). This approach continues to generate a great deal of research, and has been influential in placing

the study of groups back in the limelight of contemporary social psychology (see Hogg & Abrams, 1999; Moreland et al., 1994). Of particular relevance here, is that shared cognition lies at the heart of social identity processes.

People in groups categorize themselves and others in terms of relevant ingroup or outgroup prototypes. Prototypes form according to the principle of metacontrast – they optimize the balance between minimization of differences among people in the same group and maximization of differences between ingroup and outgroup (or non-ingroup). Prototypes define and prescribe the properties of group membership (perceptions, attitudes, feelings, behaviors) in such a way as to render the ingroup distinctive and high in entitativity (e.g., Campbell, 1958). Above all, prototypes are shared – they are shared representations of ingroup and outgroup properties. The process of categorizing someone as a group member perceptually assimilates them to the relevant ingroup or outgroup prototype, and thus depersonalizes them (i.e., they are not viewed as idiosyncratic persons, but as embodiments of the prototype). Categorization of self, self-categorization, has the same effect on self-perception, but more profoundly it transforms self-conception, attitudes, feelings, and behaviors. Self is experienced as collective self, and attitudes, feelings, and behaviors become group normative.

This analysis quite clearly identifies shared cognition as a fundamental feature of group life. In psychologically salient groups people form a shared representation of who they are and how they differ from people who are not in the group, or who are in specific outgroups. Information is selectively weighted and processed in order to clarify intergroup distinctiveness and intragroup uniformity and entitativity. The resulting group representations depersonalize our perceptions of other people and transform our own self-conception, attitudes, feelings, and behavior.

Thirty years of social identity research have assembled substantial empirical evidence for the way that psychologically salient group membership produces effects based on the emergence or existence of shared cognitions. For example, patterns of attraction within groups become based on shared prototype-based criteria (Hogg, 1992), ingroup and outgroup perceptions become based on shared stereotypes (Oakes, Haslam, & Turner, 1994), and social influence processes produce and are guided by shared membership-defining norms (Turner, 1991).

The Impact of Shared Cognitions on Group Process and Performance

A number of recent reviews of the small-group performance literature have used a cognitive or information-processing model as an organizing framework for understanding how small task-performing groups operate (Hinsz, Tindale, & Vollrath, 1997; Larson & Christensen, 1993; Kameda, Tindale, & Davis, in press; Tindale & Kameda, 2000). Hinsz et al. defined group information processing as “the degree to which information, ideas, or cognitive processes are *shared*, and are *being shared*, among the group members . . .” (1997, p. 43, italics added). Kameda et al. (in press; Tindale & Kameda, 2000) coined the phrase “social sharedness” as a general theme underlying group information process-

ing. The basic notion is that things that are shared among group members have a stronger impact on both group process and performance than do things that are not shared. We will restrict the present review mainly to cognitive aspects of “sharedness,” and will borrow heavily from these early reviews. Our purpose is to show how shared cognitions at many levels influence the types of processes and outcomes exhibited by groups. (For related discussions of some of the same theory and research, see Stasser & Dietz-Uhler, this volume, chapter 2 and Kerr & Park, this volume, chapter 5.)

Shared preferences

Much of the early research on group decision making or choice focused almost exclusively on member preferences as the legitimate inputs for aggregation (Kameda et al., in press). Social choice theorists (e.g., Arrow, 1963; Black, 1958) devised models of how these preferences should be aggregated in order to produce optimal group outcomes. In social psychology, the early work on small groups by Lorge and Solomon (1955), Smoke and Zajonc (1962), Steiner (1972), and others also devised models that used member preferences as the key inputs, although these models were more descriptive than prescriptive. Probably the most influential work on combining individual preferences in order to reach group decisions has been Davis’s (1973) social decision scheme (SDS) theory (see Davis, 1973, 1982, or Stasser & Dietz-Uhler, this volume, chapter 2 for a description of the theory).

The SDS approach has generated a large body of research findings concerning the match between differing task demands and the related group consensus processes (see Davis, 1982; Stasser, Kerr, & Davis, 1989 for reviews). Although a number of factors have been found to influence group decision processes (Davis, 1982; Laughlin, 1980), one of the more consistent and robust findings from this research has been that “majorities/pluralities win” most of the time. This is particularly true when no “demonstrably” correct alternative exists (Laughlin & Ellis, 1986). When groups cannot demonstrate that a particular alternative is “optimal” or “correct” during discussion, “correctness” tends to be defined by the group consensus, and larger factions tend to define the group consensus. Majority/plurality type processes have been found for groups working on a variety of decision tasks/situations, including mock juries (Kameda, 1991; Tindale & Davis, 1983), risk taking (Davis, Kameda, & Stasson, 1992), duplex bets (Davis, Kerr, Sussman, & Rissman, 1974), choosing political candidates (Stasser & Titus, 1985), reward allocation decisions (Tindale & Davis, 1985), and promotion decisions (Tindale, 1989).

One limitation of the SDS approach is that it is restricted to decision situations with discrete decision alternatives. However, a number of recent models have been developed that describe preference aggregation for continuous response dimensions. Crott, Szilvas, and Zuber (1991) developed a model based on Black’s (1958) work with single-peaked preference curves. Black showed that the median position among the group members dominates (in the game theoretic sense) any other possible position along the continuum, assuming member preference distributions are single peaked. Crott et al. (1991) found that a median model provided a good fit to group decision data from three different decision tasks. Davis, Au, Hulbert, Chen, and Zarnoth (1997) also found support for a

median-based model (i.e., median of the $r - 1$ closest members, with $r =$ group size) using a civil trial mock jury task. In both of the aforementioned studies, the arithmetic mean of the member preferences provided rather poor fits to the data.

Recently, Davis (1996) proposed a social judgment scheme (SJS) model for groups reaching consensus on a continuous response scale. The model is a weighted linear combination of member preferences where the weights are an exponential function of the distances between a given member's preference and all other members' preferences. (See Davis, 1996, or Kameda et al., in press for a more complete description of the model.) The amount of weight given to any member decreases exponentially as an increasing function of the discrepancy of that member's preference from the other members of the group. Thus, members whose preferences are similar to one another receive larger weights and members whose preferences deviate from most other members receive very little weight. Although formulated recently, the model has fared well in empirical tests (Davis, 1996; Davis, Stasson, Parks, Hulbert, Kameda, Zimmerman, & Ono, 1993).

The models discussed previously all share two common elements. First, they all show the influence of social sharedness at the preference level. This is most clearly demonstrated with the majority/plurality models in that the largest faction of members that share a particular preference are able to put forth that preference as the group's decision. In other words, the preference that shows the greatest degree of sharedness among the members wins. However, both the Black (1958) median model and Davis's (1996) SJS model also emphasize the degree of preference sharing. The SJS model emphasizes shared preferences explicitly by giving more weight to those members whose preferences are similar (i.e., close to one another on the response dimension). It is easiest to see the sharedness aspect of the median model by comparing it to a model based on the mean. In a six-person group with four members whose preferences are quite similar and two members whose preferences deviate substantially from the other four, the median of the member preferences would fall within the range of the four similar members. However, the mean would be influenced to a much greater degree by the two deviant members. Thus, if most of the members of a group have similar preferences, the median will reflect the shared preferences of those members.

The second common element relates to the implications of such models for group decision outcomes. All three models will tend to exacerbate in the group response distribution those preferences that are dominant at the individual level. Thus, all three models are consistent with the group polarization effect (Myers & Lamm, 1976). Again, this is rather easy to see with the majority/plurality models. For example, assume a group size of five and a response distribution containing two alternatives (Plans A and B). If one randomly selects members from a population where 55% favor Plan A and 45% favor Plan B, a majority process predicts that 59% of the randomly composed groups would choose Plan A. If the population were 60% in favor of A, then groups functioning under a majority process and sampled from that population would choose A 68% of the time. These effects are even larger with larger group sizes (e.g., 62% and 73% respectively with 10-person groups). The relationship between the other two models and the exacerbation or polarization effect can also be seen by comparison to a simple average of the group member preferences (which is often how group polarization is defined – as a deviation

from the mean of the pre-group discussion member preferences). Both the SJS and median models predict that group responses will be more influenced by members whose preferences are similar, relative to a simple average of preferences within the group. Thus, any skewness in the population distribution toward a particular end of a response continuum would be exacerbated in the group response distribution due to the higher likelihood of members having preferences in the smaller tail. In essence, all of these models give greater weight to preferences that are socially shared by a majority/plurality of members relative to the actual degree of preference sharing (i.e., the actual proportion of members who share the preference).

The above models do not make predictions concerning the individual-level preference structure after group consensus has been reached. However, a large body of research shows that group members tend to agree with, or move closer to, the group consensus choice after it has been made (e.g., Tindale & Davis, 1985; Tindale, Davis, Vollrath, Nagao, & Hinsz, 1990). Even in situations where consensus is not required, members are influenced by the positions held and arguments generated by other members (Sherif, 1936; Myers & Lamm, 1976). Thus, after group discussion, preference sharing tends to increase, regardless of whether the members must all agree on a single choice alternative or judgment position. In other words, the degree to which preferences are shared among group members both influences, and is influenced by, group decision making.

Shared information

The common knowledge effect. Although much of the early work on group decision making focused on preferences, some work did focus on the information distribution underlying those preferences (Graesser, 1982; Vinokur & Burnstein, 1974). Probably the best-known early attempt to understand groups at the information or argument level was Vinokur and Burnstein's persuasive arguments theory. In an attempt to explain group polarization, Vinokur and Burnstein argued that for any given issue, there is a population of arguments associated with it. They also argued that group discussion could be seen as members sampling arguments from that population. If there were more and/or more persuasive arguments favoring positions at one end of the continuum, then the sample of arguments would favor that end and would lead group members to move in that direction – thus, group polarization. One of the key assumptions of the theory was the importance of unshared or unique arguments. They assumed that shared arguments would have little impact when brought up during discussion because everyone already had that information. In contrast, they argued that unshared or unique information would affect member preferences and was crucial for polarization to occur.

However, more recent research has demonstrated exactly the opposite. Stasser and Titus (1985) designed a paradigm for studying the effects of shared and unshared information on group decision making that had a major impact on the field of small-group research. The paradigm has been referred to as the *hidden profile* technique and the basic finding has been called the *common knowledge effect* (Gigone & Hastie, 1996). Stasser and Titus had four-person groups choose one of three political candidates based on information profiles about the candidates. In some of the groups, all members were given complete

information about all three candidates. However, in other conditions, some information was shared by all members and some information was only held by individual members. With complete information, most individuals typically preferred a particular candidate (e.g., candidate A). However, in the hidden profile (unshared information) condition, the positive information about candidate A was divided among the group members while the negative information about A was shared. This led individual members to prefer some other candidate at the beginning of discussion. Even though the groups, with a thorough discussion, should have been able to discover that candidate A was optimal, this rarely happened. Most of the groups chose an alternative candidate, and the group discussions contained mainly shared information. In addition, a majority model tended to describe the group decision processes at the preference level.

Stasser and Titus (1987) showed that a simple information-sampling model could account for the above effects. First, research has shown that the likelihood of a piece of information being recalled by a group is a function of the number of members presented with that information (Hinsz, 1990; Tindale & Sheffey, 1992). Thus, shared information is more likely to be recalled than unshared information at the group level. In addition, even with perfect recall, the probability that a piece of information gets brought up is also a function of the number of members who have it. Based on these assumptions, Stasser and Titus (1987) formulated their information-sampling model. The model (based on Lorge and Solomon's (1955) model A for predicting group problem-solving outcomes) basically assumes that the probability, $p(D)$, that a given piece of information will be discussed is 1 minus the probability that no one mentions the item during discussion. This can be mathematically described as $p(D) = 1 - [1 - p(M)]^n$, where $p(M)$ is the probability of any given member mentioning an item that he/she has, and n is the number of members having that item. When only one member knows a given piece of information $p(D) = p(M)$. However, as n increases, so does $p(D)$ so that shared information always has an advantage over unshared information in terms of it entering into the discussion content. Gigone and Hastie (1996), using a rather different paradigm, demonstrated similar findings and shed additional light on the processes underlying the common knowledge effect. Gigone and Hastie used a multi-cue judgment task, and varied whether the cues were shared or unshared among the group members. Each group made multiple judgments so that Gigone and Hastie could assess the degree of importance each cue had for predicting individual member and group judgments. Consistent with the Stasser and Titus (1985) findings, shared cues were more important for predicting group judgments than were unshared cues, with importance generally being a linear function of the degree of sharedness (i.e., cues increased linearly in importance as more members received them). Interestingly, cues that were actually brought up during discussion did not increase in weight as a function of their being mentioned. In addition, the effects of the cues on group judgments were totally mediated by the member preferences. Thus, it seems that the distribution of information in the group (i.e., information sharedness) influences group judgments only indirectly through member preferences (i.e., preference sharedness) (though see Winquist & Larson, 1998 for an exception).

Although very robust and often replicated (see Wittenbaum & Stasser, 1996; Stasser, 1999 for review), the common knowledge effect can be attenuated by some procedural mechanisms. First, Larson, Foster-Fishman, and Keys (1994) have shown that unshared

information becomes more prevalent in group discussion over time. Thus, extending the discussion time of groups should help to insure that unshared information gets brought up during discussion. However, the opposite seems to happen when time pressures are put on the group. Groups focus on fewer alternatives and place more emphasis on shared information when under time pressure (Janis, 1982; Karau & Kelly, 1992). Recent work by Sawyer (1997) and Sheffey, Tindale, and Scott (1989) has shown that allowing group members to have access to informational records during discussion can attenuate hidden profile effects. Sawyer (1997) also found that instructing group members not to form a priori judgments helped to reduce the effects, although this has not always been found to be effective (Sheffey et al., 1989). Stasser and Stewart (1992) found that framing the task as a problem to be solved (implying a correct answer) led to greater sharing of unshared information during discussion. Finally, Stewart and Stasser (1995) demonstrated that assigning roles associated with the information distribution (e.g., “you are the expert on candidate x”) led to more discussion of unshared information, but only when the roles were known by all of the group members.

Cognitive centrality of group members. Work on the common knowledge effect has focused on the effect of shared *information* or *knowledge* per se on consensus. Little emphasis has been placed on group *members’* status or power as a function of degree of knowledge sharing with other members. For example, one member may share a substantial amount of information with other members, while another member may share only a portion of it. Since shared information has a greater impact on final group decisions, it seems likely that members having more shared information may acquire *pivotal power* in the group. This idea was tested in a recent set of studies by Kameda, Ohtsubo, and Takezawa (1997). Using a social network framework, Kameda et al. devised a model to represent the degree to which any given member was “cognitively central” in the group. Much like Davis’s (1996) SJS model, which locates members’ preference centrality, Kameda et al.’s measure of *cognitive centrality* defines members in terms of the degree of centrality in the *sociocognitive network*. The greater the degree of overlap between the information held by a given member and the information held by other members on average, the greater the degree of centrality for that member.

Kameda et al. (1997) ran two studies to assess whether cognitively more central members would be more influential in their groups, regardless of their preference status (i.e., whether they were in minority or majority factions). In Study 1, they had three-person groups discuss whether a defendant in a highly publicized trial deserved the death penalty. By coding contents of knowledge each member held prior to group interaction, they calculated a cognitive centrality score for each member in each group. They then used the members’ cognitive centrality score to predict participation rates and opinion change after group discussion. Members’ ranking in terms of centrality were positively related to their ranking in terms of participation. For members in minority factions, their degree of centrality also predicted (inversely) their amount of opinion change, though centrality was unrelated to opinion change for majority members.

In Study 2, Kameda et al. manipulated the information given to each group member to create two different situations. In one condition, the most cognitively central member of the group was a lone minority (in terms of preference) against a two-person majority.

In the other condition, the most cognitively central person was part of the two-person majority, with the minority member being the least cognitively central. When the minority person was most cognitively central, the group went with the minority position (over the majority position) 67% of the time. When the minority person was most peripheral, the minority won only 42% of the time. In addition, groups were considerably more confident in the conditions where the central minority person's preference was chosen by the group. Thus, being the most central person in the group allows that person a greater degree of influence, even when he/she is a minority in terms of preference. Kameda et al. (1997) argue that such an enhanced social power accrues from perceptions of expertise for the cognitively central member in the focal knowledge domain.

Shared task representations

Research on the common knowledge effect tends to show that shared information plays a central role in group decision making. In addition, it shows that shared information and shared preferences tend to correspond with each other. Thus, the research on shared information has tended to fit nicely with the work on majority/plurality processes. However, there are a number of instances in the small-group literature where deviations from majority processes have been observed. Probably the most notable is the work by Laughlin and his associates (Laughlin, 1980; Laughlin & Ellis, 1986) on group problem solving. Problem solving, or "intellective" tasks are defined by Laughlin as tasks where a "demonstrably correct solution" exists, as opposed to decision-making tasks where "correctness" tends to be defined by the group consensus (Kameda et al., in press). A demonstrably correct solution is one where the group members can "demonstrate" a particular alternative is correct or optimal during the group discussion. Research has shown that majority/plurality models tend to severely under-predict group performance on such tasks. Models such as "truth wins" or "truth supported wins" (where either one or two members, respectively, who prefer the correct alternative can win out over incorrect majorities) provide much better fits to the experimental data (Laughlin, 1980). In defining demonstrability, Laughlin and Ellis (1986) argued that a key feature was a system of axioms or beliefs that were shared among the group members. This shared belief system serves as a background for the members understanding the logic behind the correctness of a given alternative. Thus, using the shared belief system, minority factions arguing for a correct alternative can win out over majorities favoring an incorrect alternative.

Tindale, Smith, Thomas, Filkins, and Sheffey (1996) generalized this notion and argued that whenever a "shared task representation" exists, alternatives consistent with the representation will be easier to defend and thus more likely to end up as the group's collective choice. Tindale et al. define a shared representation as "any task/situation relevant concept, norm, perspective, or cognitive process that is shared by most or all of the group members" (p. 84). Task/situation relevant means that the representation must have implications for the choice alternatives involved, and the degree to which a shared representation will impact on group decision processes will vary as a function of relevance. Its impact should also vary as a function of the degree to which it is shared among the group members. If no shared task representation exists (or if multiple conflicting representations

are present), then groups will tend to follow a symmetric majority/plurality type process. However, when one does exist, the group process will tend to take on an asymmetric structure favoring the decision alternative that is consistent with the representation. Thus, majorities or minorities favoring the alternative consistent with the shared representation will be more powerful within the group.

Although the work by Laughlin (1980) on group problem solving is the strongest example of such effects, a number of others also exist. For example, much of the work on mock jury decision making (Davis, 1980; MacCoun & Kerr, 1988; Tindale & Davis, 1983) has shown that “not guilty” is an easier verdict to defend than “guilty,” which is consistent with the shared processing objective of looking for “reasonable doubts” given to juries in all U.S. criminal cases. Thus, both majorities and minorities favoring not guilty are more powerful than comparably sized factions favoring guilty (Tindale et al., 1990). More recently, Tindale and associates (Tindale, 1993; Tindale et al., 1996) have shown that shared decision biases or heuristics can produce similar deviations from symmetric majority processes. For example, Tindale (1989) showed that biased feedback procedures intended to produce conservative hiring or promotion practices allowed minorities voting against a job candidate’s promotion to win out over majorities favoring promotion. Tindale, Sheffey, and Scott (1993) found that groups given the “loss” version of the standard “Asian Disease” problem (Tversky & Kahneman, 1981) would choose the riskier alternative even when a majority of the members favored the less risky alternative (see also Laughlin & Early, 1982).

A recent study by Smith, Dykema-Engblade, Walker, Niven, and McGrough (in press) also showed how a shared-belief system could be used by a minority to influence a majority. In the sample of students used by Smith et al., between 80–85% were in favor of the death penalty. However, the population of students at the university also had rather strong religious (Christian) convictions. In group discussions concerning the death penalty, Smith et al. found that minorities arguing against the death penalty were effective in moving majority members toward their position if they used religious arguments to substantiate their positions. Minorities had little if any influence if they did not rely on the shared religious convictions of the majority. Other minority influence research has also shown that if a local minority (a minority within the current discussion group) argues in favor of positions that are shared by the larger population, they are more effective than local minorities that argue for positions that are also less prevalent in the population (Clark, 1990). This analysis is consistent with the social identity idea that minorities are more effective if they can be viewed as sharing social identity with the majority (e.g., Turner, 1991; see Martin & Hewstone, this volume, chapter 9).

Recent research has shown that shared representations potentially operate in two different ways to affect group decisions. First, Smith, Tindale, and Steiner (1998), using a “sunk-cost” problem, found that sunk-cost arguments were persuasive, even if only a minority of members mentioned them as reasons for their decisions. Thus, arguments that are consistent with the shared representation can be especially influential in a group-decision context. Second, a recent study by Tindale, Anderson, Smith, Steiner, and Filkins (1998), continuing a program of research looking at the estimation of conjunctive probabilities by individuals and groups (Tindale, Sheffey, & Filkins, 1990; Tindale, Filkins, Thomas, & Smith, 1993), videotaped the group discussions for conjunctive probability

problems. Earlier research had shown that minorities making non-normative (“erroneous”) estimates were more powerful than majorities making normative estimates. The videotaped group discussions showed that groups rarely discussed strategies as to how to make the estimates, but rather simply exchanged information concerning their individual judgments. Quite often (greater than 60% of the time), groups went with a single member’s judgment. When groups went with a single member’s judgment as the group judgment, they were more likely to endorse the judgment of an incorrect member for conjunction problems that typically led to errors. For conjunction problems that typically did not lead to errors, groups were more likely to endorse the judgment of a correct member. These patterns were relatively independent of the preference distribution in the group. Thus, it seems that shared task representations can affect group decisions even when only preference information is exchanged. As long as a given individual preference is plausible within the shared representation, the group members will find it acceptable without thorough debate.

Collective efficacy

A topic that is just beginning to receive attention in the groups literature is collective efficacy (Bandura, 1997; Mischel & Northcraft, 1997). An extension of Bandura’s notion of self-efficacy, collective efficacy is “a group’s shared belief in its conjoint capabilities to organize and execute courses of action required to produce given levels of attainment” (Bandura, 1997, p. 477). As a relatively young area of research, there is still a number of conceptual and methodological issues that need to be resolved, but the early findings tend to locate collective efficacy as a critical aspect of group performance (e.g., Prussia & Kinicki, 1996). Much like self-efficacy, it is seen as a central component of various aspects of motivation. Both amount of effort and persistence are seen as a function of whether the group collectively believes it is good at or can accomplish a specific task.

One of the earliest questions addressed by this research was whether collective efficacy was really different from member self-efficacy. Most of the research findings to date imply that they are separate constructs. For example, Feltz and Lirgg (1988) assessed both members’ self-efficacy and beliefs about team efficacy for seven collegiate hockey teams during a season. Early in the season, the average rating of member self-efficacy was a better predictor of team performance, but by the end of the season, collective efficacy was a better predictor of several different performance measures. Thus, it appears that accurate assessments of team efficacy take time to develop. Spink (1990) found similar effects with elite volleyball teams. He found that collective efficacy was particularly effective in terms of persistence and dealing with adversity (losses). Teams high in collective efficacy outperformed low efficacy teams after losses.

Although much of the research on collective efficacy has focused on sports teams, the concept has also been applied to organizational work teams. For example, Little and Madigan (1997) found a positive relationship between collective efficacy and performance in a field study of manufacturing work teams. These results are particularly interesting because they controlled for other factors such as members’ technical job skills. Prussia and Kinicki (1996) tested whether collective efficacy, goal setting, and affective evalua-

tions mediated the effects of feedback on task performance in a laboratory setting. By providing bogus performance feedback to the groups, they showed that both feedback and vicarious learning affected collective efficacy, but had no direct effects on performance after collective efficacy (and affective evaluations) were taken into account. The effect of goal setting on performance was also mediated by collective efficacy. A recent study by Peterson, Mitchell, Thompson, and Burr (in press) assessed the degree to which group efficacy and shared mental models (discussed more fully in a later section) would predict performance over time in classroom groups. Group efficacy was one of the stronger predictors of the variables measured and its relationship with performance was not mediated by measures of teamwork or liking for other group members. Collective efficacy has also been found to be important in social dilemma and public goods problems, wherein higher senses of efficacy in terms of being able to provide the good (even if illusory) increases cooperative behavior (Kerr, 1989; see also Kerr & Park, this volume, chapter 5).

Collective or group efficacy has also been viewed as an important aspect of leadership (see Chemers, this volume, chapter 16). One of the most important predictors of leadership effectiveness has been found to be the degree to which leaders can instill in group members perceptions of group efficacy. Such a finding is consistent with the findings of Prussia and Kinicki (1996) in that leaders are often in roles of providing groups with feedback. They are also often responsible for setting goals for and providing motivation to groups. It would seem that groups with effective leaders would be likely to form strong efficacy beliefs for their ability as a group to perform. However, some theorists have argued that collective efficacy might have a potential down side as well. Lindsley, Brass, and Thomas (1995) argue that very high levels of group efficacy could lead to overconfidence and complacency. Thus, having a leader that continues to set challenging goals for the group and focuses the group's attention on improvement strategies could be very important for avoiding these potential problems.

Shared metacognitions – Transactive memory

Thus far, our discussion of socially shared cognitions has dealt mainly with things that group members share (e.g., preferences, information, etc.) irrespective of whether the members realize the degree of sharedness. Although group discussion may make certain aspects of sharedness apparent, it does not necessarily have to (thus, the hidden profile effect). However, recent trends in small-group research have begun to focus on not only the degree of sharing, but also whether members know what is shared and not shared among the group members (Hinsz, 1996; Hinsz, et al., 1997). In cognitive psychology, knowledge about what one does and does not know is referred to as "metacognition" (Metcalf, 1996). Considering small groups as information-processing systems, metacognition at the group level can be viewed as members' knowledge of what other group members know. Shared metacognition is not really a new area in the groups literature, given it was a key aspect of the symbolic interactionism movement in sociology (Mead, 1934). However, it has only recently resurfaced in social psychology. Probably the best recent example of metacognition in groups is *transactive memory* (Wegner, 1987). Using an individual-level metaphor, Wegner argued that groups of individuals encode, store,

and retrieve information much like single individuals do. Early on in a group's existence, much of the transactive memory system must be negotiated. For example, when new information enters the group, the group may discuss where and how it should be stored and who is to be responsible for it. This can be seen as parallel to memory encoding at the individual level when learning material in a new domain. Once encoded, information can then be retrieved by the appropriate memory cues – by asking the appropriate person. However, as the group's transactive memory system becomes established, new information is simply encoded by the member whose role within the system it is to deal with that type of information. Thus, over time, the transactive memory system can work almost automatically. Much like a chess master remembers board positions with ease, groups that have been working together for many years can encode and retrieve information as a group with little if any effort. This then frees up group members' time for other task relevant actions.

Wegner (1995) argues that groups can serve memory functions much like external memory aids. In fact, he has compared group transactive memory systems to computer networks in terms of things like data sharing, directory updating, and the like. Just as other aspects of collective tasks can be distributed among group members, memory storage can also be distributed. Wegner argues that group members can rely on other members to remember information that is more consistent with their areas of expertise or preferences. Thus, other group members can serve as memory aids for information not directly relevant to a given member's main duties or role within the group. In this way, the group can remember much more than any given member, yet each member has access to the entire information in the group by knowing which members know what. It is the shared metacognitive knowledge that allows each member access to the group's entire store of information.

Most of the research on transactive memory to date has focused on dating and marital relationships (e.g., Wegner, Erber, & Raymond, 1991) – partly because transactive memory systems develop over time, and they are therefore difficult to study in laboratory settings. However, recent work by Moreland, Argote, and Krishnan (1998) has demonstrated the usefulness of transactive memory in work groups. Moreland et al. hypothesized that training group members together as a group would help foster transactive memory systems, and thus, improve group performance. Moreland et al. report a series of studies that had three-person groups learn the various aspects of a radio assembly task. The studies contained two parts: a training session and a final performance session. In the initial study, the group members were either trained individually or trained together as a group. Then, all participants worked as three-person groups to assemble a radio. Moreland et al. found that groups trained together performed better than groups whose members were trained as individuals. In addition, they found that the performance increases were due to enhanced transactive memory systems rather than other potential mediating variables, such as cohesiveness or social identity. Memory differentiation, task coordination, and trust among members as to their respective levels of expertise were found to be the critical factors involved in the transactive memory system. In later studies, they showed that being trained in one group and working in another did not produce the same benefits. Thus, simply experiencing group work was not the key factor – actually working with the same people was of central importance (Moreland, 1999).

Hollingshead (1998a, b, also this volume, chapter 23) has also isolated certain key aspects of transactive memory systems in intimate couples. She found that dating couples were better at a collective recall task than were pairs of strangers when no communication was allowed. She hypothesized that the main advantage for the couples was that they knew what the other person would expect them to remember. However, this advantage disappeared when communication was allowed, and in fact, strangers tended to outperform couples. Thus, explicit negotiation of the transactive memory system at encoding tends to improve its performance. The couples in the communication condition may have relied too heavily on implicit expectations whereas the strangers were forced to explicitly distribute responsibility. Hollingshead (1998b) also showed that non-verbal and paralinguistic aspects of communication can be important retrieval cues in a transactive memory system. Although couples performed better than strangers in both face-to-face and computer-mediated interaction settings, couples performed better in the face-to-face environment. A follow-up study showed that the lack of access to paralinguistic and non-verbal cues could account for the difference.

Shared mental models

A number of researchers have begun to borrow the concept of a *mental model* from the cognitive literature and apply the notion to small groups (Brauner, 1996; Cannon-Bowers, Salas, & Converse, 1993; Hinsz, 1996). A mental model can be seen as a template or mental representation of how a particular system operates. For example, a car mechanic may have a mental model of the internal combustion engine. Although engines in different cars may be designed slightly differently, the same mental model can be used as a template for understanding each of them. Cognitive psychologists have argued that mental models are important for understanding how people interact with various aspects of their environment (Rouse & Morris, 1986). In relation to task performance, a mental model allows the task performer to estimate the important variables and bring the requisite skills to bear on completing the task. In relation to groups, mental models have two major components: knowledge about the task and knowledge about the group and its members (Cannon-Bowers et al., 1993).

Sports teams are good examples where mental models can be applied to group performance. For example, each of the nine members of a baseball team must have an understanding of the rules of the game and the roles for each player in order for the team to work together. Thus, team players must have a mental model of the task (rules of the game) and the group (the roles of each player) in order to play effectively. However, this knowledge must be shared among the members in order for it to aid in team effectiveness. Two players who have different models of how to react in a given situation could each behave in ways that would interfere with the other's behavior.

Although research on mental models in groups is in its infancy, a number of interesting findings have already emerged. First, thorough group discussion tends to lead to a convergence of mental models among group members (Brauner, 1996; Hastie & Pennington, 1991). Hastie and Pennington have argued that deliberation (particularly *evidence-driven* deliberation) leads to a convergence in the stories that jurors use to make

sense of the evidence presented, in order to make a verdict decision. Brauner (1996) had groups work on a city planning task, where the groups were composed of two teams – economic experts and social/environmental experts. During early discussions, it was clear that the two teams had different mental models of the task. However, after two group discussion sessions, a large degree of convergence was evident. This was in spite of the fact that the teams still differed in attitudes and social categories. Conversely, Tindale et al. (1993) found little convergence in cognitive frames among group members after discussing a risky decision task. However, groups in the Tindale et al. experiment typically reached consensus in less than four minutes. Thus, it appears that mental model convergence among group members takes time to develop. Another area where the usefulness of shared mental models has been demonstrated is negotiation. Thompson (1997) compared expert and novice negotiators and discovered that not only do experts reach better negotiation outcomes than novices, but they also show a greater similarity in their mental representations of the negotiation situation. Thus, experience in negotiation leads to similar mental models, which can help negotiators find mutually beneficial tradeoffs and areas of common interest.

Although mental models can be shared without member awareness of the sharedness, there are reasons to assume that a meta-knowledge of such sharedness could aid group performance (Klimoski & Mohammed, 1994). Again using a sports team metaphor, a particular player's knowledge that other players share his/her knowledge of the game allows the player to concentrate on only those aspects of the task important for his/her role, without worrying about what the other players will be doing. Thus, the transactive memory systems discussed above are often seen as key components in shared mental models, but other components are also important. Knowledge of who knows what is important for gaining knowledge when needed, but knowledge of who is going to do what and when is important for making sure that all parts of a task are coordinated and completed.

Cannon-Bowers et al. (1993) have delineated four separate aspects or types of mental models that may be important for team functioning. The "equipment model" involves knowledge of the function and operations of the equipment to be used, which should remain fairly stable over time. The "task model" involves strategies for task performance and the various contingency plans that may be necessary. They argue that these are only moderately stable. Third, members need a shared "team interaction model" so that they can coordinate their activities and have complete and efficient lines of communication. These are also seen as moderately stable. Finally, they define the "team model" as the knowledge, skills, preferences, and tendencies of the team members. These obviously change as a function of turnover in the group. Thus, they might remain stable for long-term groups with few member changes, but could change rapidly as members are replaced.

Like transactive memory, mental models take time to develop, particularly those associated with the team and team interaction. However, Cannon-Bowers et al. (1993) argue that training, using the shared mental models orientation, can aid groups in both developing and using their shared knowledge systems. Recent evidence for this has come from research on airplane crews using the training system known as crew resources management (CRM; Helmreich, 1997; Weiner, Kanki, & Helmreich, 1993). CRM attempts to teach cockpit and complete airline crews how to use their collective resources to operate

efficiently in a crisis. It attempts to get all members of a team well versed in the expertise and duties of each member, and then to get them to effectively communicate (through both active participation and listening) the crucial knowledge they have to the other members of the team. Thus, the technique incorporates both task and group mental models. The key ideas are team based and assume that if low-status members don't provide their information, it can't be used. However, even if provided, if it is not listened to by the leaders of the team (pilots, copilots, etc.) then it can't serve its purpose. Through the use of simulators, research has shown that CRM can lead to improved safety and efficiency by airline teams (Helmreich, 1997). In addition, similar techniques are being used to train surgical teams in hospitals (Helmreich & Schaefer, 1994).

Shared identity

Although originally a theory of intergroup relations, social identity theory (e.g., Hogg & Abrams, 1988; Tajfel & Turner, 1979) more recently has begun to play a major role in understanding intragroup processes as well (e.g., Hogg, 1996). Both social identity (Tajfel & Turner, 1979) and related ideas on self-categorization (Turner et al., 1987) have been used to explore both new and old topics in the small-group literature. Since these theories and findings are well represented in a number of other chapters in this volume (see chapters by Abrams & Hogg; Hogg; Marques, Abrams, Páez, & Hogg; Reicher; and Worchel & Coutant) we will only touch on a few of the major findings here.

Earlier we discussed the notion of group polarization in terms of majority decision processes and preference sharing. However, a number of studies has shown that group identification also influences polarization (e.g., Hogg, Turner, & Davidson, 1990; Mackie, 1986; Mackie & Cooper, 1984). Where social identity is salient, for example in a salient intergroup comparative context, people categorize themselves in terms of the prototypical features of the ingroup, and assimilate themselves to the ingroup prototype – they exhibit normative behavior, or conform to the ingroup normative position. Since prototypes form according to the principle of meta-contrast, they not only capture ingroup similarity but they also accentuate intergroup difference. Thus, ingroup prototypes are typically polarized away from salient outgroups. Polarization is conformity to a polarized ingroup prototype or norm. Group interaction (or even just preference sharing) when a salient outgroup is present can, therefore, lead to more polarized attitudes within the group. The degree of polarization on a given issue can be predicted by the degree to which that issue clearly differentiates the ingroup from the outgroup.

Another traditional area in the small-group literature where social identity/self-categorization theory has been applied is group cohesiveness. Hogg and his associates have redefined group cohesiveness from a social identity perspective (Hogg, 1992; Hogg & Hains, 1996; Hogg & Hardie, 1991; Hogg, Hardie, & Reynolds, 1995). In contrast to early approaches to cohesiveness that focused on interpersonal attraction among group members, the social identity approach distinguishes between interpersonal attraction and attraction to the group, specifically attraction to the group prototype as it is embodied by group members. Of particular relevance here is the finding that when people identify (self-categorize) with a salient group, shared cognitions, in the form of shared ingroup

prototypes, transform reciprocal patterns of mutual regard into consensual regard for more prototypical group members. One of the main problems with the group-cohesiveness literature has been a lack of consistent findings concerning how cohesiveness influences group outcomes like performance. This new conceptualization of group cohesiveness may help to clarify some of these issues in future research.

The notion of social identity has also been fruitfully used to help explain cooperation in social dilemma situations (Dawes, van de Kragt, & Orbell, 1988; Rapoport & Amaldoss, 1999). Groups that are allowed to discuss the dilemma situation before being asked to donate to some group-level good are much more cooperative than groups prevented from discussion. Dawes et al. (1988) have shown that group identity created through discussion is the likely cause of such cooperation. In addition, placing a group in a competitive situation with an outgroup will also increase cooperative behavior among the members of the ingroup (Rapoport & Amaldoss, 1999). One of the more interesting recent findings in the small-group literature is the “discontinuity effect” (Schopler & Insko, 1992). Their research has shown that while individuals playing a prisoners’ dilemma game with communication are quite likely to cooperate, three-person groups playing against three-person groups are much more likely to defect. At least part of this discontinuity between individual and group behavior stems from efforts to protect the ingroup (fear of exploitation) and compete with the outgroup (greed). Since there is no group membership that is salient when individuals play the game, such intergroup forces are not operating, thus allowing for greater cooperation. The use of social identity/self-categorization theory to explain intragroup phenomena is still fairly recent, and we expect that the effects of shared identity on a number of small-group processes would be a profitable area for future research (for example, leadership – see Hogg, 2000; Hogg, Hains, & Mason, 1998).

Summary and Future Direction

Although the idea of socially shared cognitions in groups has a long history, its absence from mainstream social psychology for many years means that the potential yield in knowledge from such an approach is far from realized. We have attempted in this chapter to outline some of the key ideas and findings concerning shared cognitions in groups, but we feel the future will hold a much greater wealth of insight from this approach. Although there are many potential avenues for future research, we feel three might be particularly fruitful.

First, most of the research discussed here has tended to focus on one type of shared cognition – shared preferences, information, task representation, metacognition, and so forth. However, most group settings have the potential for sharing at multiple levels. One would expect some degree of consistency across dimensions, as some of the research has already demonstrated. Shared information tends to lead to shared preferences, as does a shared identity. However, Kameda et al. (1997) showed that members who share more information with other members can be influential even when they do not share the majority preference, and Tindale et al. (1996) have shown that shared task representa-

tions can be used advantageously by preference minorities. It would be interesting to see how other types of inconsistencies in degrees of sharedness impact on both group process and performance.

Second, very little work has been done on how sharedness at one level affects sharedness at other levels. Again, some of the research discussed here has shown interdimensional affects. Stewart and Stasser (1995) showed that giving a group a shared metacognitive framework in terms of member expertise increased the likelihood of unshared information being mentioned in the group discussion. Brauner's (1996) work on shared mental models also showed how discussion can lead to increased sharedness on some dimensions (cognitive models of the issue), while other dimensions (identity, attitudes) remained relatively unshared. Thus, further work on how different degrees of sharedness on one dimension affect sharing on other dimensions should prove interesting.

Finally, the processes by which shared cognition comes about on different levels is still relatively under-explored. Although we discussed a number of theories as to why shared cognitions should exist, studies of which forces are most salient, or which predate others in terms of time have received scant attention. Latané and Bourgeois (this volume, chapter 10) hypothesize that the belief clustering predicted by dynamic social impact theory could lead to perceptions of group identity for members within those belief clusters. Obviously, many groups in society are formed around issues (political parties, environmental groups, etc.) and often members join groups because they expect to find like-minded people. However, the self-categorization processes associated with group identities can also lead to a greater degree of cognitive sharedness. It might be interesting to compare the effects of shared cognitions in interactive groups that formed in part on the basis of shared social identity, with those that formed on a different basis.

Studying groups on any level is not an easy prospect, in terms of time, resources, and the general complexity of the focus of study. However, we hope that by showing how cognitions emerge from group life, and how groups themselves are defined by their cognition, we will inspire a new generation of researchers to find the difficulties worth the effort.

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CHAPTER TWO

Collective Choice, Judgment, and Problem Solving

Garold Stasser and Beth Dietz-Uhler

Life presents many tasks that can be performed by either individuals working alone or by small groups (teams) working collaboratively. Sarah can buy a car by herself. Or she can take her husband Frank with her; they can both kick tires, compare features, and collectively pick a car to buy. Jim can work crossword puzzles by himself but enjoys it more when his date does them with him. Hiring and promotions decisions can be made by the boss, or she can delegate these decisions to a personnel committee. Tasks that can, quite naturally, be completed alone or together present an intriguing set of theoretical and applied issues. For example, Sarah and Frank may buy a different car than either of them would buy acting alone. This unexpected joint decision may arise because Sarah and Frank prefer different cars and compromise on one that neither prefers. Or it could be that they go about making the joint decision quite differently than they would have made individual decisions. The presence of Frank may remind Sarah that he and his St. Bernard occasionally ride with her. The salience of this consideration in the presence of Frank may result in her never test-driving the sports car that would have captured her heart. One also wonders how Jim and his date would fare on the *New York Times* crossword puzzle. Would they complete more of the puzzle than Jim could working alone? On the one hand, it seems that the two together may be able to solve more clues by pooling their knowledge than either could solve individually. On the other hand, the social interaction may be distracting, resulting in under par performance by each.

Collective, Cognitive, and Cooperative Performance

It is helpful in thinking about collective performance to make some distinctions among tasks. Implicitly, we have already made one important distinction. We are interested

primarily in tasks that are amenable to either individual or group completion. Of course, this focus excludes some interesting examples of teamwork. For example, a basketball game is inherently a collective endeavor whereas a slam-dunk contest is an individual performance. Additionally, we are interested primarily in cognitive tasks. McGrath's (1984) circumplex model of group tasks includes as one dimension a continuum ranging from predominantly cognitive (solving a math problem) to predominantly physical tasks (moving a couch). Our review of collective choice, judgment, and problem solving naturally focuses more on the cognitive end of this continuum. McGrath's circumplex model also distinguishes cooperative from competitive tasks. We will focus more on the cooperative end of this continuum. Thus, for example, bargaining and negotiation are primarily competitive tasks in McGrath's scheme and are areas not covered in this chapter. None the less, we note that collective choice may often fall in the middle of the cooperative/competitive continuum. Sarah and Frank may share the overarching goal of buying a car but have to resolve conflicts of interest and preference to reach this shared goal. Similarly, Jim and his partner may both want to finish the crossword puzzle correctly, but there may be competitive overtones to their performances as they test their skills against each other's. (Who solved the most or the hardest clues?)

Selection versus Rating

Within this domain of cooperative cognitive tasks, we will make two further distinctions. The first comes from the individual decision literature (Payne, 1982; Payne, Bettman, & Luce, 1998) and, distilled to its simplest form, refers to the response format: Select one or rate. Selection tasks require selecting one of two or more options whereas rating tasks require locating a target along a continuum (e.g., attitudinal or magnitude judgments). The options in a selection task may be ordered along a continuum but typically they are more appropriately represented as discrete instances located in a multi-dimensional space. Thus, for example, Sarah and Frank have to select one of many car options. They could array their car choices along a continuum of price but this dimension by itself would hardly characterize the many considerations that would likely inform their selection. In contrast, they could rate one or each of several cars on a seven-point scale of comfort ranging from "very uncomfortable" to "very comfortable." Two additional points about selection and rating tasks should be made at the outset. First, selection often involves, either implicitly or explicitly, rating. Sarah and Frank may value comfort in their vehicles, and therefore, the judged comfort of the cars under consideration may be influential in determining their final choice. Second, collective selection and collective rating may foster different types of social process. For example, disparate individual ratings along a continuum may be easily resolved by compromise (e.g., split the difference) to yield a collective rating. (Sarah gives the Jeep Wrangler a comfort rating of "1" and Frank gives it a "3." In filling out their shared decision matrix, they agree to assign the Jeep a "2" for comfort.) However, compromise solutions to selection tasks, if they exist at all, may not be easily identified. (If Sarah wants a Honda Prelude and Frank wants a Ford Escort, is a Ford Probe the compromise choice?)

Intellective versus Judgmental Tasks

A second distinction that we wish to use was originally suggested by Laughlin (1980). He proposed that it is useful to distinguish between tasks that have a demonstrably correct answer (intellective tasks) and those that do not (judgmental tasks). Laughlin and Ellis (1986) further elaborated this distinction by proposing a continuum running from purely intellective to purely judgmental tasks. In practice, most collective, cognitive tasks fall somewhere between these pure forms. The location of a task depends on the degree to which a response can be demonstrated to be correct or incorrect. Degree of demonstrability, in turn, depends on the extent to which four conditions are met. First, there must be a shared system of inference or procedural knowledge for obtaining a correct answer. Second, there must be sufficient information to determine the correct answer within this consensually embraced system of inference. Third, individuals with the correct answer must be able and sufficiently motivated to show how the given information leads to the correct answer. Fourth, others who do not know the correct answer must be sufficiently familiar with the system of inference to understand and accept the demonstration of correctness.

To the degree that any or all of these conditions are degraded, a task becomes less intellective and more judgmental. For example, a math problem is seemingly a good example of an intellective task. Consider a classic problem from finite mathematics: What is the probability of obtaining a matching pair of socks when selecting two socks at random from a drawer with seven blue, five black, and three white socks? Elementary probability theory provides well-defined procedures for combining the given information to obtain the correct answer (which is 0.32). Solving this problem would likely be a highly demonstrable task for a group of advanced math majors. Correct members would likely find it easy to convince others who momentarily lost their way and were incorrect. However, the same problem may not have a demonstrably correct answer for a group of students selected from a remedial algebra class. Even if one member were able to obtain the correct answer, she/he may find it too taxing to convince the others that the answer is right. Indeed, there may be considerable disagreement about the appropriate way to combine the information to get the answer. The student who argues, "You will either get a match or you won't; thus you would have a 50–50 chance of getting a match," may win more converts than the student who meticulously applies the multiplication and addition rules of elementary probability to obtain the answer that most of us consider correct. Thus, task demonstrability does not reside solely in the characteristics of the task but also depends on the abilities and motivations of the group members. One group's intellective task may be another group's judgmental task.

Collective Choice, Judgment, and Problem Solving

The foregoing distinctions provide a convenient way of making explicit how we will differentiate choice, judgment, and problem solving in this chapter. As Table 2.1

Table 2.1. Schema for Categorizing Group Tasks

	<i>Response Format</i>	
	<i>Select</i>	<i>Rate</i>
<i>Judgmental</i> Demonstrability	Choice	Judgment
<i>Intellective</i>	Problem-solving	Estimation

summarizes, we view both choice and problem solving as convergent tasks that typically require a group to select one of several options. However, problem solving connotes the existence of a demonstrably correct answer whereas choice does not. Thus, we will refer to tasks that require selection of one option and that fall on the intellective end of the demonstrability continuum as problems to be solved. We will reserve the term *collective choice* to denote selection tasks that fall on the judgmental end of this continuum.

Rating tasks are often referred to as judgments. However, we are avoiding that terminology because of the likely confusion with Laughlin and Ellis' (1986) term *judgmental* which signifies the lack of a demonstrably correct answer. In our scheme, rating tasks can be either intellective or judgmental although we admit that most of the studies that examine collective ratings use tasks that are highly judgmental (e.g., attitudinal judgments). None the less, ratings tasks can have demonstrably correct answers (e.g., estimating the number of beans in a jar by checking a location on a numeric continuum). Thus, we will reserve the term *collective judgment* to refer to rating tasks that are judgmental, as opposed to intellective. There is not a term known to us that is widely used to denote intellective, rating tasks. We use the label *collective estimation* to denote such tasks where *estimation* implies guessing a correct answer by inspection (as in estimating the number of beans in the jar as opposed to counting them). There has been little work in social psychology that seemingly fits exclusively under the collective estimation category although some work on judgmental bias and accuracy comes close (e.g., Gigone & Hastie, 1997; Hastie, 1986; Tindale, 1993).

Historical Themes: Problem Solving

The study of collective problem solving has a long history in social psychology (see Davis, 1969; Hill, 1982; Shaw, 1973; and Steiner, 1972 for reviews of the early literature). In much of the early work, the emphasis was on comparing the solution rates of individuals and groups. The emergent theme from this era is that groups are more likely to solve a problem than are individuals working alone. This theme of group "superiority" goes back to Marjorie Shaw's (1932) classic study comparing the performance of four-person groups and individuals on several "brainteasers." She found that groups were much more likely to solve her brainteasers than were individuals. For example, on one class of prob-

lems, she found that 14% of individuals and 60% of groups solved the problems correctly. Explanations for such apparent superiority of groups were many. A popular view was that members corrected each other's errors in reasoning – *mutual error correction*. Another type of explanation suggested that members pooled complementary resources (knowledge, skills, etc.) to solve collectively problems that none could solve alone (akin to Collins & Guetzkow's, 1964, *assembly bonus effects*). Pooling of complementary resources provided a compelling explanation of group superiority for multi-stage, multi-part, or sequential problems. In a crossword puzzle, for example, it is evident that members with complementary word knowledge could perform better as a team than individually.

With the advent of more sophisticated ways of framing individual and group comparisons, this early era of optimism about the benefits of team problem solving gave way to a more skeptical view of group superiority in the 1950s. The central objection to group-versus-individual comparisons was that they did not necessarily reflect the benefits of *collective* action. That is, to properly capture the benefits of collective performance, one should show that a group of individuals working together perform better than the same (or comparable) individuals working alone. Thus, the basis of comparison for group performance shifted from the isolated individual to the *best* individual in the group. The argument was that if the group contained a solver, the group should solve. Otherwise, far from providing emergent benefits, the collective performance was inferior to its potential given the abilities of its members (*process loss* in Steiner's, 1972, terminology).

Staticized groups provided one comparison technique (Marquart, 1955). Individuals who had worked alone were randomly grouped, and the resulting pseudogroups were credited with a correct answer if at least one of the “members” was correct. This technique yielded an estimate of the number of actual groups that should have been correct if they were performing at the level of their best member. Similarly, and more elegantly, Lorge and Solomon (1962) suggested that the expected group solution rate, P_G , under a “best-member” model could be obtained from individual solution rates, P_i , by the following:

$$P_G = 1 - (1 - P_i)^r \quad (1)$$

where r is group size. This formulation has been dubbed the Lorge–Solomon Model A and follows from the reasoning that, under a “best-member” model, a group will fail only if no member can solve. The theme from this era was that groups rarely performed better than their best member and frequently did not perform as well as predicted by a “best-member” model.

Reflecting the pessimistic tone of this era, Steiner (1972) proposed his *process loss* model. In his view, task demands and member resources combine to determine *potential productivity* and, to the degree that group process is faulty, *actual performance* falls below potential performance. In elaborating on the notion of task demands, he developed a typology of tasks and, in doing so, developed a vocabulary that is still in vogue. For example, he distinguished tasks in terms of their inherent divisibility: *divisible* tasks (e.g., writing a report) can be easily divided into subtasks (e.g., writing major sections of a report), permitting but not requiring the allocation of subtasks to different individuals.

In contrast, *unitary* tasks defy such divisions of labor (e.g., writing a sentence). He also described several key variants of *permitted process*. On *disjunctive* tasks, the group is successful if any member is successful – a “best-member” task. On a *conjunctive* task, the group’s performance is determined by the least capable member (e.g., a task that all members must complete for the group to complete). On an *additive* task, members’ contributions can be summed. Beyond providing a vocabulary for thinking about types of group tasks, Steiner’s (1972) work promoted the shift of emphasis in collective problem solving from making simple individual and group comparisons to thinking more conceptually about how member resources could (should) be combined to yield a group solution.

Historical Themes: Collective Judgment

During the 1960s and 1970s, the study of small-group process in social psychology was dominated by the study of group polarization. Reviews of this literature are numerous (e.g., Myers & Lamm, 1976; and Isenberg, 1986). Much of this literature focused on the comparison of “average” individual opinions before and after group discussion and, thus, does not necessarily involve collective judgment. However, the impact on our thinking about collective judgment has been considerable. The intriguing finding was that group discussion polarized judgments. Typically, polarization is defined relative to a subjective neutral point on a bipolar continuum of judgment (e.g., attitudinal judgments along a scale from negative to positive affect; see Myers & Lamm, 1976). Group polarization captured the attention of social scientists partly because it countered the prevailing notion that groups were instruments of moderation and conformity. However, of more interest here is the impact that the group polarization frenzy had on the study of collective performance. First, it kept interest in group phenomena alive in social psychology at a time when the popularity of individual social psychology (e.g., attribution theory; cognitive dissonance) threatened to kill it. Second, the lively debate over theoretical explanations of polarization focused attention on social influences processes at work in groups.

Two kinds of theoretical accounts emerged from the fray of competing theories (Isenberg, 1986). These accounts continue to inform our thinking about group process and performance. The social comparison explanations claim that judgments polarize as a result of learning each other’s opinions. The social comparison view holds that the average pre-group judgment typically falls on the normatively favored pole of the continuum. As people learn that others hold more extreme opinions in this valued direction they tend also to express more extreme judgments. The other dominant explanation centers on informational influence and is most completely articulated in persuasive arguments theory (Burnstein & Vinokur, 1973, 1977). This view claims that judgments polarize because group members are persuaded by the informational content of discussion to adopt a more extreme position. In a nutshell, the theory posits that both pre-group opinions and discussion content are shaped by sampling from an available pool of relevant information (arguments). Thus, the content of discussion tends to bolster the predominant pre-group sentiment.

In the end, the empirical evidence supports both the social comparison and informational influence explanations (Isenberg, 1986; Myers & Lamm, 1972). Either process can polarize judgments. The legacy of group polarization research is twofold. First, the distinction between normative and informational social influence, first articulated by Deutsch and Gerard (1955), re-emerged in an important distinction in the understanding group action. Second, it became apparent that efforts to characterize group influence as solely normative or informational influence were doomed to be unsuccessful. The more fruitful approach is to address the factors that facilitate one or the other type of influence and to think about how they interact (Kaplan, 1987).

Historical Themes: Collective Choice

The study of collective choice thrived in the 1970s in the form of jury research (Davis, Bray, & Holt, 1977; Hastie, Penrod, & Pennington, 1983; Stasser, Kerr, & Bray, 1982; Tindale, Nadler, Krebel, & Davis, this volume, chapter 24). Controversies in judicial procedure fueled this interest providing a compelling example of how applied issues can fuel theoretical and empirical advances in the study of group performance. For example, Kerr, Atkins, Stasser, Meek, Holt, and Davis (1976) examined two issues in jurisprudence. First, what are the implications of permitting less than unanimous agreement in a jury? Second, what are the consequences of varying the definitional stringency of reasonable doubt, particularly as revealed in jury, as opposed to juror, decision making? They found that in their mock juries a unanimous decision rule resulted in more hung juries, but jurors being more satisfied with the process, than a majority decision rule. More lenient definitions of reasonable doubt (e.g., “any doubt”) increased the likelihood that jurors would favor acquittal before deliberation and that juries would acquit. However, there was no detectable effect of the definition of reasonable doubt on jury process.

In a benchmark study of juries, Kalven and Ziesel (1966) interviewed jurors after they completed their service on criminal juries. From these interviews, they reconstructed the distribution of opinions held by jurors at the onset of deliberation. One of the surprising findings was that the majority opinion at the onset of discussion foretold the final verdict for 97% of the juries who reached a verdict (i.e., excluding the 13 of 225 juries who were hung). They likened the deliberation process to developing film: the process served to illuminate an image that was already set.

This seminal investigation illustrates several useful ideas in the study of collective choice. First, where a group starts, as embodied in the opinions of its members, tells much about where the group will end up. Stated somewhat differently, the array of member preferences at the onset of discussion sets the stage for normative and informational influences that emerge during deliberation. Second, assigned decision rules (unanimity, two-thirds majority, etc.) are conceptually distinct from the way that initial opinions are combined to generate the group decision (social combination rules; Davis, 1973; Laughlin, 1980; Penrod & Hastie, 1979). That is, the “majority rules” process observed by Kalven and Ziesel (1966) emerged in juries that were operating under an assigned unanimity decision rule. This distinction between assigned decision rules and social combi-

nation rules does not mean that assigned rules are unrelated to process. As Miller (1989) noted, assigned rules can have far-reaching effects on process. For example, he concluded that juries deliberating under unanimous, as opposed to majority, rules have longer discussions and tend to produce more participation by minority factions.

Theoretical Perspectives and Formal Models

Beyond being a popular object of empirical study, the jury (particularly, the criminal jury) became the guiding metaphor in the development of many formal models of collective choice (see Penrod & Hastie, 1979, for a review of models of jury decision making). The confluence of modeling efforts in jury decision making and group problem solving (e.g., “best-member” models) inspired several models of group consensus processes (Stasser, Kerr, & Davis, 1989). Similar efforts were also evident in the collective judgment literature. Most notably, Anderson and Graesser (1976) applied information integration theory (Anderson, 1971) to group polarization. They showed that a linear averaging model that combined prior judgments with the implicational value of new information gained during discussion could account for members’ shifts in attitudinal judgments.

Three metatheoretical perspectives have emerged in the study of collective judgment, choice, and problem solving. The *social combination* perspective views group interaction as a vehicle for combining individual preferences, solutions, or opinions to yield a group choice, solution, or judgment. The *social influence* perspective views group interaction as a mechanism of social influence – both informational and normative. The *social cognition* perspective represents group interaction as interdependent cognitive activity by group members. These perspectives are not incompatible. The perspectives can be (but need not be) viewed as a progression from relatively molar to relatively molecular views of group process. That is, social influence can be the mechanism that “combines” individual preferences to yield a collective choice. Similarly, the cognitive activities involved in communication (remembering information, framing arguments, integrating new information in a judgment) can be ingredients of social influence. Each of these perspectives has inspired and guided the development of formal models of group process and productivity.

Social Combination Processes: Social Decision Scheme Theory

The development of social decision scheme (SDS) had its origins in group problem-solving models like the Lorge–Solomon Model A (equation 1) and related work (e.g., Restle & Davis, 1962). These problem-solving models and the aforementioned observations of Kalven and Ziesel (1966) underscore the predictive and explanatory value of knowing the initial response tendencies of the group members. SDS theory has four basic elements: The initial individual responses tendencies (*preferences*), the distribution of these initial preferences within the group (*distinguishable distribution*), the array of possible

group responses (*decisions*), and a probabilistic rule mapping distinguishable distributions onto each of the possible group decisions (*decision schemes*). The term *preference* in the theory takes on different shades of meaning depending on the context. In collective choice, *preference* means an inclination to choose one decision alternative over others. In group problem solving, *preference* is a choice among a set of possible or proposed solutions and often indicates a belief that one response is right (or, at least, the best among available options).

In the notation used by Davis (1973), let \mathbf{a} denote a finite set of discrete and mutually exclusive response options: $\mathbf{a} = \{a_1, a_2, a_3, \dots, a_n\}$ where n is the number of response options. The vector \mathbf{p} is a distribution of probabilities, $\mathbf{p} = \{p_1, p_2, p_3, \dots, p_n\}$, where p_i is the probability that an individual will prefer response a_i . The vector \mathbf{r} contains the distribution of preferences within a group of size r : $\mathbf{r} = \{r_1, r_2, r_3, \dots, r_n\}$, where r_i is the number of members that prefer a_i . Note that $r = \sum r_i$.

To illustrate, consider a six-person, criminal jury – that is, $r = 6$. In this case, the response options are guilty (a_1) and not guilty (a_2). The vector \mathbf{p} contains the probabilities of randomly selecting a juror who favors each of the response options. For example, $\mathbf{p} = \{.7, .3\}$ denotes a case for which individual jurors are more likely to vote for conviction than acquittal. The vector \mathbf{r} contains any one of the possible patterns of preference that can occur within a six-person jury. For instance, $\mathbf{r} = \{4, 2\}$ denotes a jury of four who favor a guilty verdict and two who favor a not-guilty verdict. In SDS theory, group composition is represented as the distinguishable distribution, \mathbf{r} . The number of possible distinguishable distributions depends on the number of preference alternatives, n , and group size, r . For a six-person jury and two decision alternatives, there are seven distinguishable distributions: (6, 0), (5, 1), (4, 2), (3, 3), (2, 4), (1, 5), and (0, 6).

Because the distinguishable distribution plays a central role in SDS theory, it is necessary in applications of the theory to *estimate*, *observe*, or *manipulate* the initial distribution of opinions in the group. If group members are polled before the group convenes or at the onset of discussion, the distinguishable distribution can be ascertained by direct observation. Also, if the opinions of potential group members are known, groups can be composed to obtain distinguishable distributions of interest. Often, however, it is necessary to estimate the probability that each of the possible distinguishable distributions will occur. For example, in the aforementioned instance of a jury for which $\mathbf{p} = \{.7, .3\}$, one can apply the binomial function rule to find the probability of sampling any given alignment of juror opinions. In this case, the probability of obtaining $\mathbf{r} = \{4, 2\}$ is the same as the probability of obtaining 4 successes on 6 binomial trials when the probability of success is .7 – that is, the probability of obtaining a $\{4, 2\}$ alignment is .32. Davis (1973) elaborates on this estimation process and gives examples of estimation procedures in more complicated cases (see also Stasser et al., 1989; and Stasser, 1999).

In SDS theory, group process is manifest in the way that members' preferences are combined or aggregated to yield the group response. Thus, knowing the social combination rule that relates the distinguishable distribution to the group response provides: (a) a description of the group process and (b) a tool for predicting a group response based on members' initial opinions. The social decision scheme matrix (\mathbf{D}) summarizes the relationships among initial alignments of support (\mathbf{r}) and the possible group responses. More specifically, each element of \mathbf{D} , d_{ij} , is the probability that the i th distinguishable distri-

bution (r_i) will lead to the j th collective response (A_j). Consider the following social decision scheme matrix for a six-person jury:

\mathbf{r} (r_G, r_{NG})	A_1 (G)	A_2 (NG)	A_3 (H)
(6, 0)	1.0	0.0	0.0
(5, 1)	0.9	0.1	0.0
(4, 2)	0.8	0.2	0.0
(3, 3)	0.1	0.6	0.3
(2, 4)	0.0	1.0	0.0
(1, 5)	0.0	1.0	0.0
(0, 6)	0.0	1.0	0.0

This $\mathbf{D}_{\text{Maj/L}}$ represents a majority process with leniency bias superimposed. When all of the six jurors favor guilty – (6, 0) – the jury is certain to convict. In contrast, four out of six favoring acquittal at the outset – (2, 4) – is sufficient to guarantee acquittal. Cases of a 3–3 split are mostly resolved in favor of the defendant, either directly by acquitting or less directly by stalemate. (This $\mathbf{D}_{\text{Maj/L}}$ is one that Stasser et al., 1982, presented as an “idealized” summary of the findings of several mock jury studies.)

Laughlin and Ellis (1986) described certain regularities that they discovered in reviewing the social combination literature. They proposed that the number of supporters within a group that is necessary and sufficient to determine a group decision is inversely related to the demonstrability of the position that they are advocating. For example, simple majorities often prevail for highly judgmental tasks, like those used in the study of group polarization (attitudinal judgments, choice dilemma items, and the like). For these tasks, there is no consensually accepted system of inference for demonstrating the correctness or superiority of one response over others. Similarly, juries often decide cases that are ambiguous given the law, the evidence, and community norms. Clear-cut cases are rarely adjudicated in a jury trial. Thus, by Laughlin and Ellis’ (1986) analysis, it is rarely possible to demonstrate the correctness of a jury verdict, and a majority/leniency scheme (like the one depicted above) typically captures the deliberation process.

For problems with self-affirming answers (“Eureka” problems) or correct answers that are obvious once proposed, one correct member is sufficient for the group to solve. Thus, for these highly intellectual tasks, a “best-member” or “truth-wins” social combination process holds. In Steiner’s terminology, such tasks are disjunctive in that only one member needs to solve for the group to solve. Laughlin and Ellis (1986) noted, however, that there is another class of problems that have “non-obvious” but demonstrably correct answers (e.g., vocabulary questions, world knowledge tests). For these problems, a “truth-supported” process is applicable. That is, at least two members of the group must have the correct answer to ensure that the group adopts the correct answer.

In summary, from the social combination perspective embodied in SDS theory, the domain of collective choice is characterized by majority/plurality decision schemes. For judgmental tasks, there is strength in numbers and the more members who support a position, the more likely it will be the group’s choice. However, this general pattern is modified for some choice tasks, jury tasks being a prime example. In this case of the jury,

acquittal requires less initial support than conviction to prevail. Perhaps decisions to acquit are more demonstrably correct than decisions to convict. In the domain of collective problem solving, “truth-wins” and “truth-supported wins” schemes characterize process.

Social Decision Schemes and Collective Problem Solving

In the SDS notation, a “best-person” or “truth-wins” model leads to a distinctive **D** matrix if we represent all incorrect answers in one response category. Thus, individuals can be correct or incorrect, and groups can be correct or incorrect. Then, **D**_{t-w} for a four-person group would be as follows:

r (r_C, r_I)	A ₁ (C)	A ₂ (I)
(4, 0)	1.0	0.0
(3, 1)	1.0	0.0
(2, 2)	1.0	0.0
(1, 3)	1.0	0.0
(0, 4)	0.0	1.0

The decision scheme for the a “truth-supported wins,” **D**_{ts-w}, for a four-person group would be as follows:

r (r_C, r_I)	A ₁ (C)	A ₂ (I)
(4, 0)	1.0	0.0
(3, 1)	1.0	0.0
(2, 2)	1.0	0.0
(1, 3)	0.0	1.0
(0, 4)	0.0	1.0

Note that both of the foregoing **D** matrices assume that the group will select an incorrect option if the critical number of correct members is not obtained. One can imagine other possibilities. For example, if the critical number of solvers does not exist, then the group may revert to a plurality scheme: The answer with the most support wins.

Returning to Shaw’s (1932) data, it is informative to ask what “truth-wins” and “truth-supported” processes predict when 14% of individuals are able to solve. Assuming random assignment to four-person groups, we estimate the probability of obtaining each of the possible distinguishable distributions using the binomial function rule. It is conventional in SDS applications to summarize these estimates in a vector, $\pi = \{.000, .009, .087, .356, .547\}$. That is, about 55% of groups will contain one solver and 36% will contain two solvers. More completely, the predicted distribution of group responses, **P**_{t-w}, under a “truth-wins” model can be obtained by:

$$\begin{aligned}
 \mathbf{P}_{t-w} = \pi \mathbf{D}_{t-w} &= \{.000, .009, .087, .356, .547\} && \begin{matrix} 11.0 & 0.0 \\ 11.0 & 0.0 \\ 11.0 & 0.0 \\ 11.0 & 0.0 \\ 10.0 & 1.0 \end{matrix} \\
 &= \{.45 \ .55\}
 \end{aligned}$$

The parallel computations for the “truth-supported wins” model yields, $\mathbf{P}_{ts-w} = \{.10 \ .90\}$. Recall that 60% of Shaw’s (1932) groups were correct. Thus, in her data, there is evidence that groups were doing better than either model predicts. However, groups do not always perform better than their best member (Hill, 1982; Steiner, 1972). A typical finding is that the group solution rate is better than the individual solution rate but not as good as the “truth-wins” models predicts.

For example, Hinsz (1990) gave six-person groups a recognition memory task (true/false questions about a previously viewed video of a simulated job interview). Groups got 85% correct on average whereas individuals got 68% correct. Out of 16 a priori decision schemes, Hinsz found that a “plurality-correct” scheme provided a better account of the results than either a “truth-wins” or a “truth-support wins” scheme. When a group had only one correct member, fewer than half responded correctly and only about 60% of groups with two correct members were correct. Interestingly, however, for items on which individual solvers tended to be highly confident, the solution rate for groups with one correct member was about 60%. Thus, for Hinsz’s recognition memory task, correct members either needed to be in the plurality or to be highly confident to get the group to adopt their response. One suspects that Hinsz’s memory task hovers on the boundary between judgmental and intellectual tasks. Members could not consult the original materials in answering the recognition memory test. Thus, in the group setting, they did not have access to the materials needed to demonstrate the correctness of their recall.

Social Decisions Schemes: A Reflection

We have touched on the application of SDS theory to collective choice (juries) and problem solving. In principle, one could apply the SDS framework to rating tasks. However, rating tasks typically involve numerous decision options arrayed along a continuum (e.g., discrete points on an attitude scale or an infinite number of locations on a scale of magnitude). Except in the simplest of these cases, the framework becomes unwieldy. For example, for a group of five considering an attitudinal response on a five-point scale, the number of distinguishable distribution is 462 and \mathbf{D} is a 462 by 7 matrix (see Stasser et al., 1989, for an elaboration on this point). Davis (1996) proposed the social judgment scheme model for continuous judgment tasks. It represents collective judgments as weighted averages of member judgments. The theoretical component of the model (analogous to \mathbf{D} in SDS) is the social influence function that relates a member’s

consensus weight to the distance between the target member's initial judgment and other members' initial judgments. Davis (1996) explored several theoretically plausible forms for the social influence function and illustrated the approach using damage awards in a mock civil trial and budget allocation in a mock school board.

SDS theory provides a molar representation of group process, relating the input of member preferences to the output of a group response. The theory about group process is embodied in the **D** matrix and does not make strong statements about the more molecular events that mediate the social combination rules. None the less, Stasser et al., (1989) suggested that the distinguishable distribution often tells us much about the social influence climate. As factions grow, they tend to have, collectively, more facts and arguments to support their position. Thus, larger factions often enjoy an informational influence advantage over smaller factions. As factions grow, they also tend to acquire more normative power. This normative power may stem from several sources. Larger factions may simply exert more social pressure to conform to their views than do smaller factions. Or, for highly judgmental tasks, number of supporters may provide social validation of opinions (Festinger, 1954). Normative power may also stem from prescriptions of fairness (e.g., "majority wins" notions of fair process) or from strategic assessments of the likelihood that a position will ultimately emerge as the group's choice (Kerr & Watts, 1982). However, SDS theory is not concerned with how social influence and consensus processes unfold over time. Its strength lies in capturing the consensus process in the aggregate and providing a conceptual tool for exploring global patterns in how member preferences are combined to yield group responses (see Stasser, 1999, for a more thorough discussion of the benefits of this approach). Other approaches, growing out of the formal modeling tradition of SDS, have attempted to represent process as social influence unfolding over time.

Social Influence Processes and Dynamic Models

Dating from Asch's (1956) classic study of conformity, numerous investigators have attempted to describe the relationship between magnitude of influence and the number of influence sources (e.g., Gerard, Wilhelmy, & Conolley, 1968; Godwin & Restle, 1974; Latané, 1981; Stasser & Davis, 1977). Building on these efforts, several theorists have explored the possibility that movement from one configuration of opinions in a group to another is an orderly process. Much of this work focuses on collective choice and has a distinct "strength-in-numbers" theme (e.g., see Stasser, Kerr, & Davis, 1989 for more detail). That is, in matters of judgment, consensus begets consensus.

Kerr (1981, 1982) built directly on SDS theory and suggested that consensus processes in groups could be represented as movement from one distinguishable distribution to another. In his social transition scheme (STS) model, changes in preferences are tracked over time and summarized in a transition matrix, **T**. The elements of **T**, t_{ij} , are the probabilities of moving from the i th to the j th distinguishable distribution. For example, Davis, Stasser, Spitzer, and Holt (1976) tabulated the transitions frequencies for six-person mock juries. Jurors indicated their current opinion on private ballots at one-minute inter-

Table 2.2. Example of an STS Matrix for a Six-Person Jury

(r_G, r_{NG})	(6, 0)	(5, 1)	(4, 2)	(3, 3)	(2, 4)	(1, 5)	(0, 6)
(6, 0)	.994	.006					
(5, 1)	.049	.938	.013				
(4, 2)	.003	.030	.917	.047	.003		
(3, 3)		.003	.030	.881	.076	.010	
(2, 4)				.026	.883	.079	.011
(1, 5)					.030	.911	.060
(0, 6)						.007	.993

(Data from Stasser & Davis, 1977.)

vals throughout deliberation. Table 2.2 presents the observed relative frequencies of moving from one distinguishable distribution to another for one sample of juries (adapted from Stasser & Davis, 1977). Due in part to the short polling interval, juries were most likely to remain in their current distinguishable distribution and, when they moved, they typically moved to an adjacent distinguishable distribution (i.e., a shift of one member from one faction to another). The leniency bias that is displayed in the $\mathbf{D}_{\text{maj/L}}$ matrix presented earlier is also evident in this higher resolution picture of the consensus process. For example, juries were more than twice as likely to move from the (3, 3) split toward acquittal (i.e., to (2, 4)) than toward conviction (i.e., to (4, 2)).

Penrod and Hastie (1980) and Hastie et al. (1983) extended these ideas by suggesting that the likelihood of a juror changing her/his mind is systematically related to the existing alignment of opinions within the jury. More specifically, the probability of a juror changing her/his vote was modeled as a monotonic function of the existing number of jurors favoring the position in the direction of change. Thus, for example, as the number of “guilty” sayers increased the probability of gaining additional guilty advocates increased. Consensus begets consensus.

Stasser and Davis (1981) adopted a similar approach to modeling movement toward consensus. In their social interaction sequence (SIS) model, they viewed group members as being in either a certain or uncertain state. When members are uncertain, they are potential converts. When they are certain of their current opinion, this certainty has to be eroded before they will change their minds. Stasser and Davis (1981) found that changes of opinion and movements into and out of certainty were both systematically related to faction sizes but in different ways. The probability of movement into certainty was linearly related to the proportion of group members in one’s own faction whereas the probability of movement out of certainty was linearly related to the number of members in opposing factions. Changes of opinion, however, were curvilinearly related to the proportional size of the faction supporting the newly embraced position. For example, in a mock jury, the probability of an uncertain juror switching to guilty increased rapidly as the number of guilty advocates surpassed a majority and approached jury size. That is, a single holdout was much more likely to convert than was either of two holdouts. Stasser and Davis (1981) speculated that the two different forms of social influence functions

reflected differential impact of normative and informational influence for the two types of changes. Certainty changes, they reasoned, were largely private events that were primarily affected by informational influence but changes of opinion were public (or soon to be public as evidenced in voting) and were affected by both informational and normative influence.

These dynamic models attempt, in the words of Godwin and Restle (1974), to map the “road to agreement” by charting the traffic into and out of distinguishable distributions. The common themes are: (a) there is influence power in numbers; (b) the relationship between numbers and social impact can be adequately expressed in a mathematical abstraction (see also, Latané’s, 1981, social impact theory); and (c) normative and informational influence are both operative in collective choice (although, perhaps, in different mixes depending on the features of the social and task environment; Kaplan & Miller, 1987; and the type of change under study as in Stasser & Davis’, 1981, distinction between changes of certainty and changes of opinion).

Social Cognition in and by Groups

Attention has recently shifted from capturing the social combination of preferences to characterizing the cognitive activities of members, both individually and collectively. Larson and Christensen (1993) noted that social cognition means two different things. Traditionally, it refers to cognition about other humans and social environments. In this sense, “social” refers to the contents and processes of individual cognition (Fiske & Taylor, 1991). Another meaning is cognition in and by groups (Fiske & Goodwin, 1994; Hinsz, Tindale, & Vollrath, 1997; Larson & Christensen, 1993). Larson and Christensen (1993) argued that it is useful to think of group-level cognitive activities that parallel those that occur at the individual level: acquisition, storage, transmission, manipulation, and use of information to produce a group-level product. Similarly, Hinsz et al. (1997) reviewed the group performance literature from the perspective of “groups as information processors.” They also organized the group performance literature by processes that are ordinarily ascribed to individual thinkers: information acquisition, encoding, storage, retrieval, and manipulation. This movement recognizes that cognitive activity often occurs in social contexts and that groupwork requires coordinated and interactive cognition by members (Resnick, Levine, & Teasley, 1991; Wegner, 1986, 1995). In this sense, social cognition is a complex and dynamic interaction among individual minds.

The ideas of groups as information processors and groups as problem-solving units provide useful metaphors. However, there are relatively few attempts to develop comprehensive theories of group-level cognitive process. The theoretical work that we have reviewed thus far addresses how individual preferences are combined or transformed to produce the group-level response. There has been much less work on theories that represent group process in terms of information processing.

A pioneering effort is Hoffman’s (1979) valence model. The model claims that groups decide by accumulating information that pertains to each of the decision alternatives that are under active consideration. As information is added to the group discussion, an alter-

native gains or loses valence depending on whether the information supports or opposes the alternative. Alternatives are dropped from consideration when their valence falls too low, and the ultimate group choice is the first alternative whose valence surpasses a threshold of acceptance.

DISCUSS is a computational model of group choice that uses the information-processing metaphor (Stasser, 1988; Stasser, in press, a). Group members are represented by the contents of their memories. As in Hoffman's (1979) valence model, information is represented by the degree to which it supports or opposes each of the decision alternatives. Members' preferences are determined by the information that they have in memory. Discussion is modeled as a series of speaking turns during which a member recalls and contributes an item from her/his memory. Others "hear" this item and, if it is new to them, they add it to their memories and re-evaluate their preferences.

More specifically, DISCUSS models group choice as three distinct phases: pre-discussion, discussion, and decision. During pre-discussion, members access information. However, memories are faulty and, depending on the amount of information to be remembered, members remember some fraction of it for later use. Each member forms a pre-discussion preference based on the information retained in memory. Discussion is simulated as a cycle of speaking turns. During each turn the selected speaker contributes an item of information from memory. For those members who do not already have the contributed item, it is added to their memory and they reevaluate their preferences using the new item. A decision is reached when a sufficient number agree (as stipulated in the operative decision rule: e.g., majority, plurality, unanimity). There is also a provision for discussion to end in a stalemate (as in a "hung" jury) if the required agreement does not emerge and no new information surfaces over a critical number of speaking turns.

DISCUSS permits several variations of collective information processing. Discussion can be modeled as either impartial fact-finding (nonadvocacy) or debate (advocacy) depending on whether speakers contribute any items from their memory or only items that favor their current preference. DISCUSS also permits natural variation in the valences that members ascribe to information. In the normative version of DISCUSS, these disparities are resolved when an item is mentioned during discussion whereas they are not resolved in a nonnormative version (Wittenbaum & Stasser, 1998). DISCUSS also simulates different patterns of speaking turns (Stasser & Taylor, 1991; Stasser & Vaughan, 1996).

Computational models (like DISCUSS) offer considerable flexibility in representing group process but lack the conciseness and tractability of mathematical models like SDS (see Stasser, in press a, for a more extensive discussion of the advantages and disadvantages of computational modeling in the study of small-group process). None the less, capturing "cognition in and by groups" seemingly demands the flexibility afforded by computational models, particularly when one aims to connect group products (decisions, solutions, etc.) to the cognitive activities of the group. Stasser (1988) provides an illustrative example. He showed that the cognitive activities of remembering, communicating, and integrating information (as represented in an early version of DISCUSS) could account for the failure of groups to select a decision alternative that was supported largely by an information set that was partitioned among a group's members (i.e., each item held by only one member; Stasser & Titus, 1985, 1987).

Information Sampling Models

A recent empirical stream that fits under the social cognition perspective is the study of information flow during group interaction. The theme of this work is that the distribution of access to information prior to group interaction has important consequences for the consideration and use of information during interaction (see Stasser, in press b and Wittenbaum & Stasser, 1996, for reviews of this work). For example, decision-making groups are more likely to discuss information that they all know (*shared* or *common* information) than information that only one member knows (*unshared* or *unique* information; e.g., Stasser, Taylor, & Hanna, 1989). Moreover, when unshared information does surface in group discussion, its impact seems muted. Other things being equal, groups are less likely to repeat unshared than shared information after it is first mentioned (Larson, Foster-Fishman, & Keys, 1994; Stasser, Taylor, & Hanna, 1989). Similarly, group members tend to recall proportionately more of the shared than the unshared information that is mentioned during group discussion (Stewart & Stasser, 1995).

These empirical findings have inspired the development of collective information-sampling models. Stasser and Titus (1987) proposed an extension of the logic underlying “best-member” models in group problem solving. They reasoned that only one member of a group needs to recall and mention an item of information to bring it to the attention of the group (i.e., discussing an item of information is a disjunctive task). More formally, define $p(R)$ as the probability that an individual will recall *and* contribute a given item of information to discussion. Then the probability, $p(D)$, that the item will be discussed by the group is given by:

$$p(D) = 1 - [1 - p(R)]^n \quad (2)$$

where n is the number of members who can potentially recall the item. (Note the structural similarity of equation 2 to equation 1, the “best-member” model.)

Suppose that each member of a three-person group recalled and mentioned 25% of the relevant information that she/he knew before discussion. Then, in equation 2, $p(R)$ is .25. If only one member knows a particular fact – “Jill thinks Jack is a jerk” – then the probability that the group will discuss Jill’s opinion of Jack is given by: $p(D) = 1 - [1 - .25]^1 = .25$. In contrast, if all three members know Jill’s opinion before discussion, then $n = 3$ and $p(D) = 1 - [1 - .25]^3 = .58$. Thus, other things being equal, the model predicts that the more widely shared an item is before discussion the more likely it will be discussed.

Larson et al. (1994) extended the logic underlying equation 2 in order to capture the sequential dependencies of sampling during discussion. They developed a computer model to generate the expected probabilities of sampling shared and unshared items across time as a function of the numbers of shared and unshared items and group size. Their dynamic sampling model predicts that: (a) early in discussion, shared items will be more likely than unshared items to be discussed; (b) as discussion progresses, the pool of shared items will be depleted more rapidly than the pool of unshared items; and (c) eventually, the remaining unshared items will be more likely than the remaining shared items to be

discussed. Based on this construction of the collective sampling process, Larson et al. (1994) argued that shared information would be over-represented in the early phases of discussions but, if discussions continued sufficiently long, unshared information would become increasingly likely to surface (see, Larson, Christensen, Abbott, & Franz, 1996, for empirical evidence).

Social Cognition in Groups

Another approach to studying social cognition in groups is to transport to the group setting well-established findings from the study of social cognition by individuals in isolation (Fiske & Goodwin, 1994). The attempts to study social cognition in groups have been sporadic and sparse. However, the promise seems great. How do people in groups form impressions of others, how do they remember and reconstruct shared events, and how do they collectively explain social events? On the one hand, understanding how people “think” in groups can inform our understanding of how they develop a shared sense of their social world. On the other hand, transporting our knowledge of how people think in isolation to the group context can provide useful clues to how they think together.

For example, in the area of collective judgment, Ruscher and her colleagues (Ruscher & Duval, 1998; Ruscher & Hammer, 1994; Ruscher, Hammer, & Hammer, 1996) have investigated how groups form collective impressions of another person. Their research allows them to trace the formation of impressions in dyads by tracing the content of their communications. When reaching a consensus is an explicit goal, discussions focus on stereotype-consistent information and reinforce stereotypic impressions (Ruscher & Hammer, 1994). However, Ruscher & Duval (1998) found that, when communicators possessed unique, nonstereotypical information, they focused their communications on this unique information and forestalled the development of stereotypical impressions by recipients of the information.

In collective choice, several investigators (e.g., Bazerman, Giuliano, & Appelman, 1984; Beeler, 1998; Dietz-Uhler, 1996; Moster, 1997; Whyte, 1993) have examined the conditions under which groups are likely to escalate their commitment, a phenomenon typically studied in individuals (e.g., Brockner, 1992; Staw, 1997). A good deal of evidence shows that individuals are likely to continue on a previously chosen course of action despite receiving negative feedback concerning the outcome of the initial decision (see Brockner, 1992 and Staw, 1997 for reviews). Research also suggests that groups are more likely than individuals to escalate their commitment to a failing course of action (Bazerman et al., 1984), especially when group members identify strongly with their groups (Dietz-Uhler, 1996), when groups can make internal attributions for their performance (Moster, 1997), and when group members are asked to explain rationally why various unexpected outcomes might occur before being given performance feedback (Beeler, 1998).

Comparing how people make social judgments and decisions when alone and together is interesting in its own right. Identifying the conditions under which groups are more

(or less) prone to render stereotypical judgments and demonstrating that groups are more prone to escalate commitment to a failing endeavor are informative and intriguing. More importantly, they present a challenge to the field. How can we account for such findings in our process models? A fundamental question is whether alone versus together differences arise because people think differently in groups (cognition is different in groups than in isolation) or because they operate on different input (e.g., communicated information, others' opinions) and modify their overt responses (ratings, votes) in the group setting. Delving into such process questions seems likely to inform our understanding of social cognition both by individuals and by groups.

A Comment on Collective Estimation

We have traced the evolution of theoretical perspectives in collective choice, problem solving, and judgment. In doing so, we have emphasized the interplay between theory, empirical findings, and formal model development. The temptation is to project where we will go from here. However, such projections are fraught with uncertainty and almost surely will miss the mark in important ways. Rather, we would like to comment on the fourth cell in our typology of tasks – collective estimation tasks. This is the under-represented cell in the social psychology of group performance, but it is not an empty cell.

Several investigators have examined the impact of group discussion and judgment on well-documented, individual judgmental biases (e.g., Argote, Devadas, & Melone, 1990; Tindale, 1993; Wittenbaum & Stasser, 1995; Wright, Luus, & Christie, 1990; Wright & Wells, 1985). In some cases, group interaction reduces the bias whereas in others it enhances the bias. In these studies, judgmental bias is typically defined by a shift in rating due to (logically or statistically) irrelevant information or by the lack of an effect of relevant information (e.g., base rate information). Tindale, Smith, Thomas, Filkins, & Sheffey (1996) suggested that, when a bias arises due to a widely shared judgmental heuristic or belief system, group interaction will enhance the bias. In contrast, when the underlying cognitive process is less widely shared and groups are likely to contain one or more members who are not susceptible to the bias, the group interaction may provide an opportunity for more accurate members to persuade (or correct) less accurate members. None the less, the question of what makes groups bias-amplifiers in some cases and bias-reducers in others is far from settled (Kerr, MacCoun, & Kramer, 1996).

Others have examined whether groups are more or less accurate than individuals on rating tasks when there is a correct or optimal answer (for recent reviews, see Gigone & Hastie, 1997; and Hastie, 1986). Accuracy implies that there is a location on the rating scale that is demonstrably correct either because the correct rating is objectively available or there exists a valid system of combining available information to obtain an answer. The literature has focused mostly on comparisons of group with individual accuracy. The usual finding is that groups are more accurate than the typical individual and about as accurate as the average of their members' mean judgments prior to convening (Gigone & Hastie, 1997). The implication is that collective estimation offers little advantage over statistical combinations of individual judgments. However, there is evidence that groups

do more than simply average their members' ratings. For example, Sniezek and Henry (1989, 1990) found that groups frequently gave estimates that fell outside the range of estimates provided by their members before discussion (in judging car prices and the frequency of various causes of death). In these "out-of-range" cases, groups were clearly doing more than "social averaging."

Gigone and Hastie (1997) concluded that "research on group judgment accuracy is stagnant" (p. 166). They made a strong case that this stagnation is partly due to methodological shortcomings and presented a well-articulated and elegant method for comparing group and individual accuracy on rating tasks. We suspect that the stagnation may also be due to the paucity of process theory – theory that speaks to how individual judgments are affected by and transformed into collective judgments. One suspects these processes may be fundamentally different for collective judgment and collective estimation tasks. For example, consider the range of possibilities in Davis' (1996) social judgment scheme (SJS) model for weighing members' contributions to a collective rating. In the initial applications of SJS, the weights depended on the distance between a target member's initial rating and other members' initial ratings. That is, being close to others initially seemingly enhanced one's influence on the collective judgment. In this version of the model, agreement begets agreement in a manner reminiscent of the "consensus begets consensus" processes in collective choice. Such a process may be dominant when rating tasks are highly judgmental. Davis (1996) used rating tasks – awarding damages in a mock civil trial and making budget allocations in a mock school board – that are arguably judgmental (in the Laughlin, 1980, sense of lacking demonstrably correct responses). To speculate a bit, as rating tasks become more intellectual, it could be that members gain impact by being close to the demonstrably correct answer rather than (or in addition to) being close to others. Thus, in collective estimation tasks, the descriptively accurate social influence function in SJS may be based, at least partly, on members' distance from the correct response.

Summary

The study of collective performance in social psychology has been characterized by a lively interplay between empirical investigation and the development of formal models. The empirical work falls loosely into three categories. Early work tended to focus on group versus individual comparisons. For example, studies showed that groups are more likely to solve a problem than individuals working alone and that groups tend to make more polarized attitudinal judgments than do individuals. Over time, group versus individual comparisons were replaced by more sophisticated questions about how individual responses are (or should be) combined to yield a group response. Steiner (1972) and Davis (1969) reviewed some of the important work addressing individual-into-group questions. Finally, recent work has focused more directly on the social influence, cognitive, and communication processes that shape, reshape, and meld individual responses en route to group response. Three metatheoretical perspectives have guided recent empirical and theoretical efforts. The social combination perspective views group interaction as a means of com-

binning individual responses to yield a group response. Social decision scheme theory (Davis, 1973) is a prime example of a formal modeling approach that gives explicit expression to the social combination perspective. The social influence perspective views group interaction as a mechanism of social influence, modifying and consolidating individual response tendencies within the overarching social pressure to produce a consensus. Dynamic models of opinion change give legs to this perspective (e.g., Kerr's, 1981, social transition scheme model; and the JUS model of jury decision making, Hastie et al., 1983). More recent in origin, the social cognition perspective represents group interaction as the stage for interdependent cognitive activities by and among group members. Modeling efforts that were inspired by this perspective include DISCUSS (a computational model of group decision making; Stasser, 1988), and collective information sampling models (e.g., Larson et al., 1994). We contend that the study of collective performance has been enriched by the interplay between theory and data. Moreover, the different views of process and performance afforded by the social combination, the social influence, and the social cognition perspectives provide considerable depth and richness to our understanding of collective performance.

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CHAPTER THREE

Social Categorization, Depersonalization, and Group Behavior

Michael A. Hogg

Groups exist by virtue of there being outgroups. For a collection of people to be a group there must, logically, be other people who are not in the group (a diffuse non-ingroup, e.g., academics vs. non-academics) or people who are in a specific outgroup (e.g., academics vs. politicians). In this sense, social groups are categories of people; and just like other categories, a social category acquires its meaning by contrast with other categories. The social world is patterned by social discontinuities that mark the boundaries of social groups in terms of perceived and/or actual differences in what people think, feel, and do. Clearly, any analysis of group behavior should, to some extent, rest upon an analysis of categories and of social categorization processes, and of the social relations between categories (intergroup relations). More explicitly, a full analysis of processes within groups invites an integration, or, to use Doise's (1986; Lorenzi-Cioldi & Doise, 1990) terminology, an "articulation," of different levels of explanation – in this case, social categorization, interindividual interaction, and intergroup relations.

Social psychologists have, however, tended to find such an integration problematic. The traditional area of group dynamics which was central to social psychology from the 1940s into the 1960s, largely focused on interpersonal interaction in small task-oriented face-to-face groups, such as military units, teams, and discussion groups (see Cartwright & Zander, 1968; Shaw, 1981). In this context the relevant self-concept was, to use Brewer and Gardner's (1996) terminology, the "relational self." Although this approach provided a rich analysis of, for example, friendship patterns (e.g., Festinger, Schachter, & Back, 1950) and communication networks in groups (e.g., Bavelas, 1968), it did not conceptualize groups as categories, and did not explore the role of social categorization or the wider intergroup context of group behavior (see Hogg, 1992, 1993). Indeed, one issue was precisely how to differentiate groups from categories, and thus identify the "proper" focus for the study of group processes. Researchers in the small-group dynamics tradition

have tended to define groups as being, for example, small (e.g., Shaw, 1981) and interactive (e.g., Arrow, McGrath, & Berdahl, 2000; Wilder & Simon, 1998) – a definition which can render problematic the study of, for example, racial prejudice and discrimination as a group process.

The small-group dynamics tradition lost popularity, largely to attribution, social cognition, and intergroup relations research, during the late 1960s and early 1970s – a turn of events famously documented by a series of laments by Steiner (e.g., Steiner, 1974, 1986). Currently, the study of group processes remains more popular outside the social psychological mainstream; in management schools and industrial and organizational psychology departments (Levine & Moreland, 1990, 1995; McGrath, 1997; Sanna & Parks, 1997), and in the fields of education, health care, and international relations (Tindale & Anderson, 1998). However, since the late 1980s there has been a revival of a new and different form of group processes research within social psychology, that articulates with developments in social cognition and the study of intergroup relations and social identity (see Abrams & Hogg, 1998; Hogg & Abrams, 1999; Moreland, Hogg, & Hains, 1994).

While traditional group dynamics failed to explore the social categorization process associated with groups, the social cognition tradition (e.g., Devine, Hamilton, & Ostrom, 1994; Fiske & Taylor, 1991) did the opposite – it explored in great detail the nature of social categories and the categorization process, but failed to explore group processes or intergroup relations. Social cognition was about cognition and perception, not groups. For traditional social cognition, the relevant self-concept was, again to use Brewer and Gardner's (1996) terminology, the "individual self." In recent years there has been gradual convergence of social cognition research, and social identity research into intergroup and group behavior (e.g., Abrams & Hogg, 1999; Leyens, Yzerbyt, & Schadron, 1994; cf. Brown, 2000).

Both group dynamics and social cognition have generally not focused on large-scale intergroup relations and the collective self. The analysis of large-scale social categories, their relations to one another, and the collective self has a long and illustrious history in social psychology, stretching back, in different forms, to Wundt, Le Bon, McDougall, James, and Mead (see Farr, 1996; Hogg & Williams, 2000). However, with the ascendancy of Floyd Allport's (1924) behaviorist vision for social psychology this emphasis has been less prominent for most of what Farr (1996) calls the modern era of social psychology. Social identity theory is a marked exception to this trend (Tajfel, 1972; Tajfel & Turner, 1979; Turner, 1982; see Hogg & Abrams, 1988). Framed by the development of a post-war European approach to social psychology that emphasized societal and intergroup aspects of social behavior (e.g., Tajfel, 1984), and drawing on Tajfel's early work on social perception and prejudice (e.g., Tajfel, 1969), social identity theory integrates a consideration of the categorization process (e.g., Tajfel, 1972), social comparison processes (see Hogg, 2000; Turner, 1975), self-enhancement motivation (see Abrams & Hogg, 1988), and people's beliefs about relations between groups (see Tajfel & Turner, 1979), in order to explain intergroup behavior and the collective self/social identity (see Hogg, in press a). More recently the categorization process has been more fully elaborated (self-categorization theory: Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) as has the motivational role of uncertainty reduction (e.g., Hogg, in press b; Hogg & Mullin, 1999).

Social identity theory and self-categorization theory can be considered to be different but compatible emphases within a general social identity approach (e.g., Hogg, 1996a; Hogg & Abrams, 1988, 1999; Hogg & McGarty, 1990; Turner, 1999). This approach has generated a very large literature (e.g., Abrams & Hogg, 1990a, 1999; Ellemers, Spears, & Doosje, 1999; Hogg & Abrams, 1988; Robinson, 1996; Turner et al., 1987; Worchel, Morales, Páez, & Deschamps, 1998) which has made a significant impact on social psychology, and has helped re-energize interest in groups (e.g., Abrams & Hogg, 1998; Hogg & Abrams, 1999; Hogg & Moreland, 1995; Moreland, Hogg, & Hains, 1994). However, this work has largely not explored intragroup processes and the traditional topics of small group dynamics, except as a byproduct of the main focus on intergroup behavior. In recent years this lacuna has begun to be addressed by, for example, research on social attraction (e.g., Hogg, 1992, 1993), socialization (e.g., Levine & Moreland, 1994), deviance (e.g., Marques & Páez, 1994), leadership (e.g., Hogg, 1996a), and subgroup structure (e.g., Hornsey & Hogg, in press a) – also see Hogg (1996a, 1996b; Hogg & Terry, 2000).

What we are left with, then, is (a) the traditional study of dynamic processes within groups which is restricted to small interactive groups, and does not explicate social categorization processes, large-scale social categories, or the role of intergroup relations; (b) traditional social cognition which has much to say about social categories and social categorization, but little to say about group and intergroup processes; and (c) social identity theory which focuses on social categories, the categorization process and intergroup behavior, but has paid less explicit attention to processes within groups. The aim of this chapter is to fill in some of these gaps; to show how social categorization, contextualized by intergroup relations, influences social processes and structures within groups through processes related to collective self and social identity (also see Hogg, 1996a, 1996b; Hogg & Terry, 2000).

Social Categorization and Social Categories

Categorization

Categorization is probably the most basic and essential of all cognitive processes (e.g., Bruner, 1957; Doise, 1978; Eiser & Stroebe, 1972). It focuses attention on contextually relevant and meaningful aspects of the world – highlighting important distinctions and de-emphasizing unimportant ones. It renders a multifaceted and infinitely varying perceptual field, James's (1892) "blooming, buzzing confusion," contextually meaningful by segmenting it into a smaller number of categories. This is highly adaptive because instead of having to treat each of an infinite variety of stimuli as unique and thus unpredictable, we are able quickly to assign stimuli to pre-existing categories and thus are able to predict what is likely to happen. Categorization renders the world more predictable and thus allows us to plan effective action. For example, if we did not categorize, then an encounter with a large four-legged tan-colored creature with shaggy mane and huge yellow teeth would leave us puzzled as to what might happen and what we should do. The category

label “lion” would instantly render the situation meaningful and would provide a very clear prescription of what might happen and what action should be taken.

Social categorization

Categorization operates on non-social and social stimuli alike. However, there are some critical differences. These stem from the fact that social categorization implicates self and thus revolves around comparisons among people, including self. Early research by Tajfel (e.g., Tajfel, 1959; Tajfel & Wilkes, 1963; also see Doise, 1978; Eiser & Stroebe, 1972) identified an accentuation effect of social categorization: categorization accentuates perceived differences between categories and similarities within categories on dimensions believed to be associated with the categorization (i.e., stereotypical dimensions), and the effect is amplified when either or both the categorization and the associated dimension are subjectively important. The process of categorizing people exaggerates perceived similarities among people in the same group (rendering them less easily identifiable – e.g., Taylor, Fiske, Etcoff, & Ruderman, 1978) and differences between people in different groups, and the effect is stronger if it is important to distinguish between the groups (e.g., you belong to one of the groups) and if the perceptual dimension is important (e.g., a strongly evaluative dimension like “nice–nasty” or “honest–dishonest”).

According to this research, categorization perceptually homogenizes ingroups and outgroups. Further research suggests there is an asymmetry to this process – a relative homogeneity effect in which outgroups are perceptually homogenized more than are ingroups, especially on group-defining dimensions, and when groups are in competition (e.g., Judd & Park, 1988; Mullen & Hu, 1989; Quattrone & Jones, 1980). There is also some evidence that social minorities perceive the *ingroup* to be more homogenous than the outgroup (Simon & Brown, 1987; also Simon, 1992) presumably because ingroup solidarity may be strategically important for a minority.

Another line of research on categorization processes has identified an illusory correlation effect which is based on paired distinctiveness or on associative meaning (Chapman, 1967; Hamilton, 1979; Hamilton & Gifford, 1976; Hamilton & Sherman, 1989; Mullen & Johnson, 1990). People tend to exaggerate the degree of association between stimuli that are distinctive (i.e., share some unusual feature) or that people believe should go together. These processes, which are more prevalent where people process information from memory than on-line (McConnell, Sherman, & Hamilton, 1994), are implicated in stereotyping of group members. The notion that stereotypical attributes are tightly associated with categories is also supported by research on automaticity, which generally shows that unconscious category-primers automatically produce stereotypical perceptions of category members (e.g., Bargh, 1994; Devine, 1989; cf. Lepore & Brown, 1997, 1999).

What motivates social categorization? The general assumption, elaborating on the description above, is that people categorize others in order to render the social world a meaningful and predictable place in which we can act efficaciously. This suggests that the reduction of subjective uncertainty may be a core motivation for social categorization,

and that therefore the more uncertain we are (generally, or in specific contexts) the more likely we are to categorize people (e.g., Hogg, in press b; Hogg & Mullin, 1999). Another motivation is self-enhancement or self-esteem (e.g., Abrams & Hogg, 1988; Turner, 1982). Social categorization almost always involves placing oneself in one of the categories, and thus acquiring the evaluative attributes of that category. It follows, then, that in particular contexts we might categorize people, or categorize people in particular ways, because by so doing there are favorable self-evaluative consequences. I explore this point in more detail below.

Social categories

Social categorization places people in categories. Although categories can be represented in terms of a limited set of necessary attributes, research suggests that this may be restricted to formal scientific taxonomies. In real life, and particularly for social categories, we tend to represent categories as fuzzy sets of attributes where members have a “family resemblance” (e.g., Cantor & Mischel, 1979; Mervis & Rosch, 1981). The fuzzy properties of such a category are embodied by the category prototype, which, because it is an abstraction of properties, no real member may embody – rather, category members vary in the degree to which they match the prototype. Categories can also be represented in terms of specific instances one has encountered – exemplars (Smith & Zárate, 1992). The precise relationship between prototype and exemplar representations of social categories remains to be fully explored (e.g., Fiske & Neuberg, 1990).

Although the category prototype may effectively represent the average group member, this does not necessarily have to be the case (Chaplin, John, & Goldberg, 1988). Prototypes can sometimes be extreme. Indeed, the representation of social categories is influenced not only by properties of the category itself, but also by the wider social comparative context within which the category exists, as well as by people’s motivational and strategic goals. Of particular relevance here is the principle of meta-contrast which is thought to govern the context-dependent representation of groups as prototypes (e.g., Turner et al., 1987; also see Oakes, Haslam, & Reynolds, 1999). A critical feature of prototypes is that they maximize similarities within and differences between groups, and thus define groups as distinct entities and elevate their entitativity (Campbell, 1958; also see Brewer & Harasty, 1996; Hamilton & Sherman, 1996; Hamilton, Sherman, & Lickel, 1998; Sherman, Hamilton, & Lewis, 1999). Prototypes form according to the principle of meta-contrast; maximization of the ratio of intergroup differences to intragroup differences. Because prototypes capture not only similarities within groups but also differences between groups, prototypes can often be extreme or polarized relative to the central tendency of a specific group. The way we perceive or represent a social group can therefore change as a function of what group or groups it is compared against in a specific context. Transient changes in comparative context produce situation-specific changes in prototypes; enduring changes in comparative context lead to enduring change in prototypes.

Although group prototypes reside in the social comparative context, people have a tendency to attribute these prototypical properties to underlying and immutable psycholog-

ical properties of the group and its members – they see the group as having a psychological “essence” that is reflected in properties of the prototype (e.g., Medin & Ortony, 1989; Miller & Prentice, 1999). Essentialism, which may to some extent be a group level manifestation of the fundamental attribution error (Ross, 1977) or correspondence bias (Gilbert & Jones, 1986; also see Gilbert & Malone, 1995; Trope & Liberman, 1993), can be seen in the tendency to view racial and gender differences in terms of personality, biology, and genetics.

Self-Categorization and Social Identity

Putting together the notions of prototype and of categorization based accentuation, we can see that social categorization perceptually assimilates people to the relevant ingroup or outgroup prototype. A social field comprising multifaceted and unique individuals is perceptually transformed into a social field containing people who to varying degrees match the relevant group prototype – a process called “depersonalization” because the basis of perception is group prototypicality rather than personal idiosyncrasy or interpersonal relationships. Since prototypes capture any and all features that define category membership (i.e., attitudes, feelings, and behaviors) depersonalization makes people in groups appear attitudinally, affectively, and behaviorally relatively homogenous – an effect which closely mirrors stereotyping. Because prototypes are generally widely shared, the stereotyping process is very much a group not an individual process (Tajfel, 1981; also see Oakes, Haslam, & Turner, 1964).

Thus far we have focused largely on how social categorization affects social perception. However, the critical contribution of self-categorization and social identity theory to the study of group processes is that they link social categorization to self-conception and psychological group membership. The core idea is that we categorize ourselves just as we categorize others, and thus we depersonalize ourselves (e.g., Turner et al., 1987). Prototype-based depersonalization of self is the process that makes group behavior possible. It transforms self-conception so that we conceive of ourselves prototypically (prototypes define and evaluate the attributes of group membership), and our behavior assimilates or conforms to the relevant ingroup prototype in terms of attitudes, feelings, and actions. Self-conception in terms of an ingroup prototype is a representation and evaluation of self in collective terms – a representation of self in terms of qualities shared with others. In this sense the collective self is best considered a textured repertoire of relatively distinct social identities tied to all the groups to which we feel we belong. The collective self, or rather collective selves, is tightly tied to group membership.

Social categorization has profound effects on self-conception, social perception, and behavior – it generates characteristically “groupy” effects. A critical question is when do people self-categorize – when does prototypicality become the psychologically salient basis for self-conception, perception, and behavior? Theory and research suggests an interaction between category accessibility and category fit (e.g., Oakes et al., 1994; Oakes & Turner, 1990) that operates within the motivational framework provided by self-esteem

and uncertainty reduction (see Hogg, 1996a; Hogg & Terry, 2000). People, influenced by self-enhancement and uncertainty reduction motives, categorize the social context in terms of categories that are chronically accessible in memory (e.g., because they are valued, important, and frequently employed aspects of the self-concept) and/or rendered accessible by the immediate context. That categorization becomes salient which best accounts for relevant similarities and differences among people in the context (structural/comparative fit), which best accords with the social meaning of the context (normative fit), and which best satisfies self-enhancement and self-evaluative concerns. Once fully activated on the basis of optimal fit, category specifications organize themselves as contextually relevant prototypes and are used as a basis for the perceptual accentuation of intragroup similarities and intergroup differences; thereby maximizing separateness and clarity. Self-categorization in terms of the activated ingroup category then depersonalizes behavior in terms of the ingroup prototype.

The construction and nature of social categories, and the specific form that group and intergroup behavior takes is not a mechanical expression of social categorization processes. Because ingroup prototypes define and evaluate social identity, and therefore self, people strive for ingroup prototypes that are evaluatively positive. They pursue evaluatively positive distinctiveness for their own group relative to relevant other groups, because this furnishes positive social identity and positive self-esteem (Turner, 1982; also see Abrams & Hogg, 1988). In an intergroup context, people can adopt a range of strategies to do this (Tajfel & Turner, 1979; also see Ellemers, 1993; Hogg & Abrams, 1988): They can subtly or assertively compete for more favorable dimensions of intergroup comparison, or a more favorable status relationship; they can compare themselves with less favorable outgroups; or they can attempt to categorize themselves and be categorized by others as members of the more favorable outgroup. The choice of strategy rests on people's pragmatic, though not necessarily accurate, beliefs about the nature of intergroup relations in terms of the stability, legitimacy, and permeability of intergroup boundaries, and the probability of success of a particular strategy.

Social identity theory does a relatively good job of tying together social categorization, the self-concept, and intergroup relations. Traditionally, however, the main emphasis has been on large-scale intergroup phenomena such as prejudice, stereotyping, intergroup conflict, and discrimination (e.g., Hogg & Abrams, 1988; Oakes et al., 1994). In the last decade or so there has, however, been an increasing emphasis on small group and intragroup phenomena. The remainder of this chapter is a discussion of some effects of social categorization processes within groups.

Social Categorization Effects Within Groups

Social categorization affects intragroup behavior via self-categorization and prototype-based depersonalization. It produces ingroup identification, a sense of belonging, self-definition in group terms, and ingroup loyalty and favoritism. It also causes conformity to group standards and normative behaviors among members, as well as mutual positive regard and cohesion. Prototypicality becomes the critical and highly salient yardstick of

group life such that those who are prototypically deviant are heavily censured, while those who are prototypically central become highly influential. Variation in perceived prototypicality within groups can produce intragroup structural differentiation.

It is important, however, to keep clearly in mind that processes within groups are dynamically interdependent with intergroup processes – one mutually affects the other. A change in the intergroup comparative context can dramatically change the ingroup prototype, and groups themselves have some control over intergroup relations and the representation of outgroups and of intergroup relations. The discussion, below, of social categorization and depersonalization effects on processes within groups is wide ranging, covering conformity, normative behavior, crowd behavior, group polarization, the behavioral expression of attitudes, cohesion and liking, deviance, leadership and power, roles, status, diversity, subgroups, assimilation and pluralism, and organizational mergers and acquisitions.

Conformity and Normative Behavior

One of the most obvious ways in which social categorization affects intragroup behavior is through conformity and normative behavior. Self-categorization depersonalizes attitudes, feelings, and behavior in terms of the ingroup prototype. Effectively, this causes people to conform to the prototype and to behave normatively. To the extent that people within a group agree on the prototype, there is attitudinal consensus and normative homogeneity. The social process associated with conformity through prototype-based depersonalization is referent informational influence (e.g., Hogg & Turner, 1987; Turner, 1982, 1985) – people in a salient ingroup are motivated to learn about the prototype and thus pay close attention to the behavior of ingroup members, particularly those who are prototypical. Although non-ingroup members (e.g., outgroup members, the media) can be informative about ingroup norms, there is little doubt that prototypical ingroup members are the most direct and immediate source of reliable information.

Crowd behavior

Indeed, Reicher (1982, 1984; also see Reicher, this volume, chapter 8) has used this latter idea to elaborate a social identity explanation of crowd behavior. In contrast to traditional de-individuation type explanations of crowds (e.g., Zimbardo, 1970), Reicher argues that crowd events are generally situations in which social identity is highly salient and thus behavior is carefully regulated by well-established ingroup norms. However, these norms may not prescribe the precise behaviors that are appropriate in what may be, for most people, the rather unusual circumstances of a crowd event. In these circumstances the established group's norms provide the limits for behavior, but members need to pay close attention to the identity-consistent behavior of fellow ingroup members, particularly those who are highly prototypical, in order to learn the precise situation-specific and identity-consistent behaviors to engage in.

Group polarization

The self-categorization analysis of conformity has reasonably good empirical support (see Abrams & Hogg, 1990b; Hogg & Turner, 1987; Turner, 1991; Turner & Oakes, 1989). For example, Abrams, Wetherell, Cochrane, Hogg, and Turner (1990) found support for this analysis across three classic influence paradigms – Sherif's autokinetic paradigm, Asch's conformity paradigm, and the group polarization paradigm. Group polarization (e.g., Moscovici & Zavalloni, 1969) is a particularly interesting case. Social psychologists have tended to view conformity as an averaging process where people in a group converge on an average position. Against this backdrop, the discovery that small groups could reach a group decision that was more extreme than the average of individual members' pre-discussion positions was quite remarkable. Polarization, which seemed to occur when the pre-discussion mean was already displaced from the midpoint of the relevant attitude-scale, seemed not to be a conformity phenomenon at all. Many explanations have been proposed for group polarization, of which the two best established are persuasive arguments and social comparison/cultural values (see Burnstein & Vinokur, 1977; Isenberg, 1986; Sanders & Baron, 1977).

These explanations have tended to separate polarization from conformity; viewing them as quite different phenomena. In contrast, social identity theory treats polarization as a conformity phenomenon. Under conditions of social identification and self-categorization people conform to a group prototype which can represent the central tendency of the group or which can be polarized away from a relevant outgroup – polarization is conformity to a polarized ingroup prototype or norm (e.g., Wetherell, 1987). This analysis has reasonably good support from empirical studies that experimentally manipulate the salience of group identification and, via the intergroup comparative frame of reference, the position of the ingroup prototype relative to the mean ingroup position – polarization emerges where people identify with a group that has a polarized prototype (e.g., Hogg, Turner, & Davidson, 1990; Mackie, 1986; Mackie & Cooper, 1984; Turner, Wetherell, & Hogg, 1989).

Attitudes and behavior

Group norms that prescribe ingroup attributes may also have a special role in integrating people's attitudes with their behavior. The relationship between attitudes and behavior has long been problematic for social psychology, because attitudes often seem to have a very weak relationship to behavior (see Eagly & Chaiken, 1993). Recently, some researchers have tried to see whether ingroup norms may play an important role in the attitude-behavior relationship (see Terry & Hogg, 2000).

For example, Terry and Hogg (1996) argue that the attitude-behavior relationship is stronger when people self-categorize in terms of a salient group membership for which the attitude is normative/prototypical, particularly if the attitude prescribes the behavior. This idea has been supported in a series of experiments involving attitude issues such as voluntary student unionism, career choice in psychology, computer hacking, and students' responsibility for campus litter (e.g., Terry, Hogg, & McKimmie, in press; Wellen, Hogg,

& Terry, 1998; also see Terry, Hogg, & White, 2000). The increased attitude–behavior correspondence is automatically assured by the depersonalization process.

However, the correspondence may also occur for more deliberate, strategic reasons. Specifically, people may enact ingroup-prototypical behavior in order to validate their group membership to themselves. Research suggests that publicly performed behavior can lead to more enduring internal attitudinal and self-representational change (e.g., Brauer, Judd, & Gliner, 1995; Schlenker, Dlugolecki, & Doherty, 1994; Tice, 1992). People may also want to communicate their group membership to fellow members by publicly exhibiting behavior that confirms membership – there is a communicative or self-presentation function to the behavior (Baumeister, 1982; Schlenker, 1980; Tice & Faber, in press). This communicative aspect of behavior has been explored from a more strictly social identity perspective by Abrams (1990, 1994), Emler (1990; Emler & Reicher, 1995), and Reicher and his colleagues (Reicher, Spears, & Postmes, 1995). The core idea is that the depersonalization based link between attitudes and behavior is moderated by strategic considerations revolving around social identity management – people may want to proclaim their identity through behavior, or they may want to conceal it. Ingroups provide an arena in which people, particularly marginal members who aspire to core membership, are more likely to want to proclaim their membership through behavior (including derogation of outgroups) and thus manage their reputations as core members (Noel, Wann, & Branscombe, 1995; Reicher, Levine, & Gordijn, 1998).

Group Cohesiveness and Social Attraction

For the early study of group dynamics, group cohesiveness was both the process of group formation and the index of group solidarity. Although initially defined scientifically by Festinger, Schachter, and Back (1950) in terms of attraction to the group and its goals and members, commentators (e.g., Evans & Jarvis, 1980; Hogg, 1992, 1993; Mudrack, 1989) have observed that most conceptual and operational definitions have tended to refer to the development of bonds of interpersonal liking among members of small interactive groups. In this way there is nothing special about groups; they are a “nominal fallacy” – merely an aggregate of people who like one another.

In contrast, the social identity analysis of categorization processes suggests that group cohesion or solidarity is not only attraction among group members, but also attitudinal and behavioral consensus, ethnocentrism, ingroup favoritism and intergroup differentiation, and so forth – the entire range of effects of categorization-based depersonalization. Self-categorization and depersonalization are the processes of group formation and group solidarity; cohesiveness is a consequence. The relationship between depersonalization and interindividual attraction has been captured by the social attraction hypothesis – group solidarity and cohesion are a reflection of depersonalized prototype-based interindividual attitudes (Hogg, 1992, 1993). A distinction is drawn between interindividual evaluations, attitudes, and feelings that are based on and generated by being members of the same group or members of different groups (depersonalized social attraction), and those that are based on and generated by personal predilections and by the idiosyncrasies and complementaries of close and enduring interpersonal relationships (personal attraction).

Depersonalization may produce ingroup liking in a number of ways: For example, it imbues ingroup members with attributes of the generally evaluatively positive ingroup prototype, and thus renders them prototypically attractive; it accentuates prototype-based similarity between self and fellow members and thus produces similarity-based liking (e.g., Hogg, Hardie, & Reynolds, 1995); and it extends positive self-regard to fellow members who are prototypically closely linked to self (see Cadinu & Rothbart, 1996; Simon, 1997; Simon & Hastedt, 1999; Smith & Henry, 1996).

When a group is salient, ingroup members are liked more if they embody the ingroup prototype – thus, prototypical members are liked more than marginal members. Where the prototype is consensual certain people are consensually liked, and where all members are highly prototypical there is a tight network of social attraction. Of course, outgroup members are liked less than ingroup members. When a group is not salient, liking is based on personal relationships and idiosyncratic preferences. The prediction is that patterns of liking in an aggregate, and the bases of that liking, can change dramatically when an aggregate becomes a salient group (for example when uncertainty or entitativity are high, or when the group is under threat or is engaged in intergroup competition over a valued scarce resource). Social and personal attraction are not isomorphic (see Mullen & Copper, 1994). These predictions have been supported repeatedly by a program of research with laboratory, quasi-naturalistic, sports, and organizational groups (Hogg, Cooper-Shaw, & Holzworth, 1993; Hogg & Hains, 1996; Hogg & Hardie, 1991, 1992, 1997; Hogg, Hardie, & Reynolds, 1995). One application of the social attraction hypothesis is to the explanation of groupthink: Suboptimal decision-making procedures in highly cohesive groups, leading to poor decisions with potentially damaging consequences (e.g., Janis, 1982). There is now evidence that the critical component of cohesiveness associated with groupthink is social attraction not interpersonal attraction (Hogg & Hains, 1998; see Turner, Pratkanis, Probasco, & Leve, 1992).

Differentiation Within Groups

Social categorization perspectives have tended to focus on differentiation between groups, and placed less emphasis on differentiation within groups. However, the social attraction idea explicitly acknowledges that groups are internally differentiated on the basis of prototypicality – an intragroup prototypicality gradient exists. Some people are, or are perceived to be, more prototypical than others (see Hogg, 1996a, 1996b). The notion of a prototypicality gradient has direct implications for the study of deviance and leadership as intragroup processes, and implications for the study of structural differentiation within groups.

Deviance

Within almost all groups there are fringe, marginal, or peripheral members who are perceived only weakly to match the defining or prototypical properties of the group. The

social attraction hypothesis explains how such people, particularly in cohesive groups, are consensually unpopular relative to more prototypical members. They can even be cast into a deviant role within the group because they threaten the prototypical integrity of the group relative to outgroups. Marques and his colleagues have pursued this idea through research into what they call the “black-sheep” effect (e.g., Marques, 1990; Marques & Páez, 1994; Marques, Páez, & Abrams, 1998; Marques & Yzerbyt, 1988; Marques, Yzerbyt, & Leyens, 1988; see Marques, Abrams, Páez, & Hogg, this volume, chapter 17). They have shown that a person behaving in a particular way is more strongly rejected if that same person is defined as a non-prototypical member of a salient ingroup than a non-prototypical member of a salient outgroup. Furthermore, these effects are contingent on social categorization processes and are stronger among people who identify strongly with their group.

The notion that ingroup deviants may attract particularly negative reactions from fellow ingroupers because such deviants threaten the integrity and distinctiveness of the ingroup has also been well supported by recent social categorization research (e.g., Branscombe, Wann, Noel, & Coleman, 1993; Jetten, Spears, Hogg, & Manstead, 2000; Jetten, Spears, & Manstead, 1996, 1998). This research also shows that peripheral members may try to reestablish their membership credentials by acting in a markedly derogatory manner toward an outgroup, particularly when this behavior is publicly observable by an ingroup audience (Noel, Wann, & Branscombe, 1995) – see earlier discussion of strategic self-presentational aspects of group behavior. Core members only act in this way when the group’s position as a whole is under threat (Jetten, Spears, & Manstead, 1997).

The process of evaluative marginalization of deviants may not only target peripheral individuals, but may also target groups of peripheral members. Under these circumstances an intergroup dynamic may come into play between the dominant majority subgroup and the deviant minority, with the minority perhaps adopting minority influence tactics to reinstate itself or to convert the majority to its own position (Mugny, 1982; see Martin & Hewstone, this volume, chapter 9). Generally speaking, deviance processes within groups should not be viewed as only a mechanical reflection of prototypicality. Deviants also serve an important strategic function for groups – they act as scapegoats for group deficiencies and failures, and their very non-prototypicality can serve to clarify what *is* prototypical.

Thus far, I have restricted discussion to negative deviants – people whose behavior muddies intergroup boundaries because they diverge from the ingroup prototype toward the outgroup prototype. What about “positive” deviants – group members who are a-prototypical but in evaluatively favorable ways; for example, over-achievers or high flyers? On the one hand over-achievers should be socially unattractive because they are a-prototypical, but on the other hand they should be socially attractive because the group can bask in their reflected glory (cf. Burger, 1985; Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976; Cialdini & de Nicholas, 1989; Sigelman, 1986; Wann, Hamlet, Wilson, & Hodges, 1995). There is some evidence that people are evaluatively particularly harsh on over-achievers who suffer a setback or experience a fall (e.g., Feather, 1994), but this research does not differentiate between over-achievers who are members of a salient ingroup and those who are not.

From a social categorization perspective we could predict that the immediate and intergroup social context of over-achievement determines the evaluation of positive ingroup deviants (Hogg & Terry, 2000). There are two dimensions to the model: (a) A functional dimension. Where solidarity and consensual prototypicality are important to the group, perhaps due to uncertainty concerns, positive deviants are dysfunctional for the group; they will be evaluatively downgraded, much like negative deviants. Where solidarity is less critical and prototypicality less consensual, but self-enhancement is important, positive deviants are functional for the group; they will be upgraded as they contribute to a favorable redefinition of ingroup identity. (b) A social attribution dimension. Where positively deviant behavior can be “owned” by the group, the deviant will be favorably evaluated; this would be likely if the deviant modestly attributed the behavior to the support of the group rather than to personal ability, and where the deviant had little personal history of over-achievement (i.e., was a “new” deviant). Where positively deviant behavior cannot readily be “owned” by the group, the deviant will be unfavorably evaluated; this would be likely where the deviant took full personal credit for the behavior without acknowledging the group’s support (i.e., “boasted”), and where the deviant had a long personal history of over-achievement (i.e., was an enduring deviant).

A common aspect of deviance is that groups tend to pathologize deviance. People who simply differ, or deviate, from the rest of the group are often viewed in pathological terms as having dysfunctional and deviant personalities – the demonization of deviants is clearly strategic, as described above, but it may also reflect the logic of essentialism and the fundamental attribution error or correspondence bias (see Gilbert & Malone, 1995; Medin & Ortony, 1989; Trope & Liberman, 1993). An example of this process at the societal level is the overemphasis on delinquency as a clinical problem. Although delinquent behavior may reflect pathological problems, it is also behavior that deviates from societal norms of acceptable behavior for adolescents and young adults. Emler (1990; Emler & Reicher, 1995) has suggested that an important aspect of delinquency is reputation management. Delinquent behavior provides a distinctive social identity for young (mainly male) adults, who engage in delinquent acts publicly in order to build a reputation for themselves among their delinquent peers – a reputation that acknowledges and affirms their social identity and group membership. This analysis is relatively consistent with earlier sociological work on labeling theory and deviant careers (e.g., Becker, 1963).

Leadership and power

Whereas prototypical marginality is about deviance, prototypical centrality is about leadership (for reviews of the leadership literature see Chemers, this volume, chapter 16; Lord, Brown, & Harvey, this volume, chapter 12). One way in which social categorization is implicated in leadership is described by leader categorization theory (e.g., Lord, Foti, & DeVader, 1984; Nye & Forsyth, 1991; Nye & Simonetta, 1996; Rush & Russell, 1988). People have preconceptions about how leaders should behave in general and in specific leadership situations. These preconceptions are cognitive schemas of types of leader (i.e., categories of leader that are represented as person-schemas) which operate in the same way as other schemas (see Fiske & Taylor, 1991). When someone is categorized on the

basis of their behavior as a leader, the relevant leadership schema comes into play to generate further assumptions about behavior. Leadership schemas vary in situational inclusiveness. Subordinate schemas apply only to specific situations, whereas superordinate schemas apply to a wide range of situations and embody quite general personality characteristics. Good leaders are people who have the attributes of the category of leader that fit situational requirements. This perspective is soundly based in contemporary social cognition. It treats leader categories as nominal categories; that is, cognitive groupings of instances that share attributes but do not have any psychological existence as a real human group. Leadership is viewed as a product of individual information processing, not as a structural property of real groups or as an intrinsic or emergent property of psychological ingroup membership.

An alternative social categorization perspective is framed by social identity theory (Hogg, 1996a, 1999, in press c). Self-categorization constructs a gradient of actual or perceived prototypicality within the group, such that some people are more prototypical than others and act as a focus for attitudinal and behavioral depersonalization. Prototypical members appear to exercise influence, because others behave as they do. Furthermore, such people are also consensually socially liked, which furnishes them with the capacity to actively gain compliance with their requests – people tend to agree and comply with people they like. This empowers the leader, and publicly confirms his or her ability to exercise influence. Furthermore, prototypical leaders are likely to identify strongly with the group and thus exercise influence in empathic and collectively beneficial ways; thus strengthening their perceived prototypicality and consensual social attractiveness. Consensual attractiveness also confirms differential popularity and public endorsement of the leader, imbues the leader with prestige and status, and instantiates an intragroup status differential between leader(s) and followers.

There is also an attribution process that tends to over- or mis-attribute the leader's behavior to stable, internal personality attributes – the fundamental attribution error (Ross, 1977) or correspondence bias (Gilbert & Jones, 1986). Because the behavior being attributed, particularly over an enduring period, includes the appearance or actuality of being influential over others' attitudes and behaviors, being consensually socially attractive, and gaining compliance and agreement from others, the attribution process constructs a charismatic leadership personality for the leader. A number of factors accentuate this attribution process. Because prototypicality is the yardstick of group life it attracts attention and renders highly prototypical members figural against the background of the group; thus enhancing the fundamental attribution error (Taylor & Fiske, 1978). The emerging status-based structural differentiation between leader(s) and followers further enhances the distinctiveness of the leader(s) against the background of the rest of the group. Furthermore, to redress their own perceived lack of power and control, followers seek individualizing information about the leader because they believe that such information is most predictive of how the leader will behave in many situations (Fiske, 1993; Fiske & Dépret, 1996).

Together, these processes transform prototypical group members into leaders who are able to be proactive and innovative in exercising influence. This also equips leaders to maintain their tenure. They can simply exercise power (more of this below), but they can also manipulate circumstances to enhance their perceived prototypicality; they can exer-

cise self-serving ideological control over the content of the prototype, they can pillory ingroup deviants who threaten the self-serving prototype, they can demonize outgroups that clearly highlight the self-serving ingroup prototype, and they can elevate uncertainty to ensure that members are motivated to identify strongly with a group that is defined as the leader wishes (uncertainty can be managed as a resource by people in power, e.g., Marris, 1996).

Direct tests of the social identity theory of leadership have focused on the fundamental core prediction that as a group becomes more salient emergent leadership processes and leadership effectiveness perceptions become less dependent on general leader schemas and more dependent on group prototypicality. There is support for this idea from laboratory experiments (e.g., Duck & Fielding, 1999; Hains, Hogg, & Duck, 1997; Hogg, Hains, & Mason, 1998; Platow & van Knippenberg, 1999) and a naturalistic field study (Fielding & Hogg, 1997). There is also indirect support from a range of studies of leadership that are in the social identity tradition (de Cremer & van Vugt, *in press*; Foddy & Hogg, 1999; Haslam, McGarty, Brown, Eggins, Morrison, & Reynolds, 1998; Platow, Reid, & Andrew, 1998; van Vugt & de Cremer, 1999). There is also support for the idea that prototype-based depersonalized social attraction may facilitate leadership. There is some direct evidence from the studies by Fielding and Hogg (1997) and de Cremer and van Vugt (*in press*), whereas in other studies social attraction is a component of the leadership evaluation measure (e.g., Hains, Hogg, & Duck, 1997; Hogg, Hains, & Mason, 1998). The attribution and associated structural differentiation components of the theory have indirect support (e.g., Fiske, 1993; Fiske & Dépret, 1996), but remain to be directly tested.

Definitions of leadership usually distinguish leadership from power (e.g., Chemers, this volume, chapter 16; Lord, Brown, & Harvey, this volume, chapter 12). Leadership is a process of influence that enlists and mobilizes the aid of others in the attainment of collective goals; it is not a coercive process in which power is exercised over others. The social identity theory of leadership is consistent with this type of definition. Prototypical leaders do not need to exercise power in order to have influence; they are influential by virtue of their position and the depersonalization process that assimilates members' behavior to the prototype. They and their suggestions are intrinsically persuasive because they embody the norms of the group. In addition to not "needing" to exercise power, it is possible that prototypical leaders may be "unable" to exercise power. High prototypicality is associated with strong ingroup identification; self and group are tightly fused prototypically and thus any form of negative behavior directed against fellow members is effectively directed against self. There may exist an empathic bond between leader and followers that protects against any desire to exercise power over others let alone destructive use of power or the abuse of power.

However, leaders sometimes do exercise power in harmful ways. Why does this happen? How can it be curbed? One possibility is that increasing status-based differentiation between leader and followers effectively instantiates an intergroup relationship. The leader is now no longer prototypical for the followers, and the empathic ingroup bond that protects against abuse of power is severed. Leadership through ingroup prototype-based influence is no longer effective, so the leader now needs to, and can, gain influence by

exercising power over other members of the group, “as if” they were outgroup members. Such a relationship is competitive and potentially exploitative; far removed from prototype-based leadership.

The progression from benign influence to destructive wielding of power can be curbed by anything that inhibits the process of structural differentiation, and that re-grounds leadership in prototypicality. External threat from an outgroup might be particularly effective – it enhances identification and depersonalization, and increases solidarity and social attraction. Power may, paradoxically, also be curbed by quite the opposite circumstances. If a group becomes less cohesive, more diverse, and less consensual about its prototype, it is less likely that followers will endorse the same person as the leader. Thus, the leader’s power base will fragment, and numerous new “contenders” may emerge. Although this limits the leader’s ability to abuse power, it also undermines prototype-based leadership. It should also be noted that leaders who have become accustomed to exercise power may vigorously resist any threats to their ability to exercise power.

This analysis of leadership and power is explored fully elaborated by Hogg and Reid (in press). It suggests that leaders only exercise power when the self-categorization contingent processes of social attraction and prototypical attribution structurally differentiate the leader from the rest of the group, and thus change the leader–group relationship from an intragroup relationship into some form of unequal status intergroup relationship. The exercise of power now becomes associated with other intergroup behaviors (e.g., stereotyping, intergroup discrimination, social “dislike”) that inevitably widen the gulf between leaders and followers.

Structural differentiation within groups

We have seen how social categorization affects intragroup processes via prototypicality gradients. However, social categorization can also affect intragroup processes by creating subgroups that may have competitive intergroup relations within the superordinate group. I have already discussed two instances of this – deviant subgroups and leader/follower groups.

Another way in which groups can encompass social categories is through roles. Although roles are distinct from one another, they are promotively interdependent in the life of the group. Roles can be very specific in circumscribing behaviors; for example pilot, navigator, and cabin crew in an airplane. Other roles can be somewhat more generic. For example, Moreland and Levine have analyzed group socialization in terms of people’s movement through distinct membership roles – newcomer, full member, old-timer, marginal member (e.g., Levine & Moreland, 1994; Moreland & Levine, 1982; Moreland, Levine, & Cini, 1993; also see Levine, Moreland, & Choi, this volume, chapter 4; Worchel & Coutant, this volume, chapter 19). Identification with and commitment to the group as a whole is influenced by generic role position (different roles prescribe different prototypes for the same group), and by role transition processes (e.g., initiation rites) that vary in terms of the strength of commitment to the group that they elicit.

Roles are rarely of equal status. For instance, in a restaurant, although chef and washer-up are both essential to the group, there is a sharp status differential between these roles. The analysis of status-differentiated roles in groups has been most thoroughly presented by expectation states theory, or status characteristics theory (e.g., Berger, Fisek, Norman, & Zelditch, 1977; Berger, Wagner, & Zelditch, 1985; de Gilder & Wilke, 1994; also see Ridgeway, this volume, chapter 15). Influence in groups is governed by the extent to which members have qualities and skills that are very specifically related to the group's purpose – called specific status characteristics. However, general social status outside the group (diffuse status characteristics) creates favorable expectations that the person is also valuable to the group, when in fact diffuse status may have little relevance to the group. This analysis of category differentiation within groups is useful for understanding the dynamics of power and influence within groups, in a way that incorporates a consideration of power and influence in the wider society within which small groups are located.

Another way to approach category structure within groups is in terms of analyses of socio-demographic diversity. This approach recognizes that almost all groups have a membership that is diverse in terms of socio-demographic category memberships such as race, ethnicity, gender, (dis)ability, and so forth. Groups are an arena in which are played out wider intergroup relations that are often evaluatively polarized and emotionally charged; conflict, disadvantage, marginalization, and minority victimization can arise. Research suggests that intragroup socio-demographic relations are likely to be salient and to recreate discriminatory societal relations, when, within the group, role classification is correlated with minority status demographic categorization (Brewer, 1996; Brewer, von Hippel, & Gooden, 1999) – for instance, if there are relatively few female employees in an organization and they are all employed in secretarial or clerical positions. This problem can be ameliorated where demographic categorization and role assignment are cross-cut or uncorrelated within the group (see Vescio, Hewstone, Crisp, & Rubin, 1999). For example, Marcus-Newhall, Miller, Holtz, and Brewer (1993) found that when category membership and role assignment were not convergent (i.e., they were cross-cut), category members were less likely to favor their own category on post-test ratings, and they were less likely to differentiate between the categories than in a convergent role structure.

The general issue here is of how subgroups relate to one another when they are nested within or cross-cut with a superordinate group. Social identity theory, and more general social categorization perspectives, make predictions about the nature of relations between subgroups as a function of the nature of their relationship to the superordinate group (see Hornsey & Hogg, *in press a*). Much of this work is framed by the “contact hypothesis” to investigate the conditions under which contact between members of different groups might improve enduring relations between the groups (e.g., Brown, 1996; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Gaertner, Dovidio, & Bachman, 1996; Gaertner, Rust, Dovidio, Bachman, & Anastasio, 1995; Hewstone, 1994, 1996; Pettigrew, 1998).

Subgroups often resist attempts by a superordinate group to dissolve subgroup boundaries and merge them into one large group. This can be quite marked where the superordinate group is very large, amorphous, and impersonal. Thus, assimilationist strategies within nations, or organizations, can produce fierce subgroup loyalty and inter-subgroup competition. Subgroup members derive social identity from their groups and thus view

externally imposed assimilation as an identity threat. The threat may be stronger in large superordinate groups due to optimal distinctiveness considerations (Brewer, 1991, 1993). People strive for a balance between conflicting motives for inclusion/sameness (satisfied by group membership) and for distinctiveness/uniqueness (satisfied by individuality). So, in very large organizations, people feel over-included and strive for distinctiveness, often by identifying with distinctive subunits or departments.

Some research suggests that an effective strategy for managing inter-subgroup relations within a larger group is to make subgroup and superordinate group identity simultaneously salient. For example, Hornsey and Hogg (1999, 2000, in press) conducted a series of experiments in which inter-subgroup relations were found to be more harmonious when the subgroups were salient within the context of a salient superordinate group, than when the superordinate group alone or the subgroups alone were salient. This arrangement reduces subgroup distinctiveness and identity threat, at the same time as it reconfigures inter-subgroup relations so that they resemble promotively interdependent role relations rather than competitively interdependent intergroup relations (Hornsey & Hogg, in press a). It is a social arrangement which may capture the policy of multiculturalism adopted by some countries to manage ethnic diversity at a national level (cf. Prentice & Miller, 1999).

A specific case of subgroup structure is provided by mergers and take-overs in the world of organizations. The post-merger organization contains within it the pre-merger organizations and their intergroup relations. Since these relations are often competitive and sometimes bitter and antagonistic, it is not surprising that mergers often fail (e.g., Blake & Mouton, 1985; Buono & Bowditch, 1989; Haunschild, Moreland, & Murrell, 1994). If a failed merger is defined as one where competitive and hostile intergroup relations prevail within the new organization, then we can predict that this is likely to happen where old loyalties persist in an overly assimilationist environment that threatens a valued and self-definitional important pre-merger organizational identity (e.g., Hornsey & Hogg, in press a). At the inter-organizational level an organization that believes its lower status position is legitimate and stable and that it is possible for members to pass psychologically into the more prestigious organization (i.e., acquire a social identity as a member of the prestigious organization) will be unlikely to show organizational solidarity or engage in inter-organizational competition. Instead, members attempt as individuals to dis-identify and gain psychological entry to the new organization. This would increase their support for the merger, and their commitment to and identification with the new merged organization. In contrast, an organization which believes its lower status position is illegitimate and unstable, that passing is not viable, and that a different inter-organizational status relation is achievable, will show marked solidarity, engage in direct inter-organizational competition, and actively attempt to undermine the success of the merger. Although members of low-status organizations are likely to respond favorably to conditions of high permeability, an opposite effect is likely for employees of the higher status pre-merger organization. Permeable boundaries pose a threat to the status they enjoy as members of a higher status pre-merger organization, and so they are likely to respond negatively to permeable intergroup boundaries. This analysis has support from studies of an airline merger (Terry, Carey, & Callan, in press), and a bank merger (Anastasio, Bachman, Gaertner, & Dovidio, 1997; Gaertner, Dovidio, & Bachman, 1996).

Concluding Comments

The aim of this chapter has been to explore the effects of social categorization on intragroup phenomena. In order to do this I have adopted a social identity perspective, because, by theorizing how social categorization in a wider intergroup social context produces prototype based depersonalization of self and others, it provides probably the best basis for understanding group membership based social categorization effects within groups. Although, social identity theory focuses on social categories, the categorization process and intergroup behavior, it has paid less explicit attention to processes within groups. However, it provides a more promising start, I feel, than the traditional study of dynamic processes within groups, which is restricted to small interactive groups, and does not explicate social categorization processes, large-scale social categories, or the role of intergroup relations; and traditional social cognition, which has much to say about social categories and social categorization, but little to say about group and intergroup processes.

The core premise is that human groups are social categories; but, of course, categories that vary enormously in size, structure, purpose, diversity, longevity, degree of social interaction, and so forth. Social categorization transforms perception, thought, feeling, and action so that self and others are assimilated to the prescriptions of a contextually relevant ingroup or outgroup prototype – a process of prototype-based depersonalization. This very basic social-cognitive process interacts with representations grounded in social experience, to produce the general form and the specific content of group behaviors and collective self-conceptualization.

I showed how this analysis helps us to understand a wide array of intragroup phenomena. We discussed conformity and normative behavior – with a particular emphasis on crowd behavior, group polarization, and the behavioral expression of normative attitudes in group contexts. We saw how consensual social attraction emerged within groups, and how this related to the general solidarity and cohesion of groups, and the social popularity of highly prototypical group members. We saw how categorization-based variability in group prototypicality among group members might produce deviant individuals or minority subgroups, and how even positive deviants might attract negative ingroup reactions. In contrast, highly prototypical group members may become group leaders. We discussed role differentiation within groups and how identification with the group as a whole may be influenced by the roles that people occupy within the group. Because roles vary in status, role occupants acquire status within the group through the roles they occupy. However, status within the group is also strongly influenced by socio-demographic status outside the group. This led into a discussion of socio-demographic diversity within groups and the management of subgroup relations within a group.

The extension of social categorization, and more specific social identity, analyses to the study of processes within groups is gathering momentum and providing an exciting new synthesis of the traditional social psychological study of group dynamics and the more contemporary study of social cognition, intergroup relations, and self and identity. One particularly promising arena for this research direction is the study of organizations. Organizations are complex groups that contain nested and cross-cut subgroups – they are large impersonal categories as well as small interactive groups, they exist in a matrix of inter-

group relations, they provide the context for a host of small group processes, they influence people's attitudes and behaviors, and they contribute significantly to self-definition, social identity, and the self-concept. Organizational psychologists have increasingly adopted some social identity concepts to help understand aspects of organizational processes – since Ashforth and Mael (1989) first introduced the ideas to an organizational readership. This trend has strengthened (e.g., Pratt, 1998), with the recent involvement of social identity researchers and a developing dialogue between social and organizational psychologists around this theme (see Hogg & Terry, 2000, in press).

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CHAPTER FOUR

Group Socialization and Newcomer Innovation

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Small groups have been an important research focus in social psychology for decades. Although relevant work has waxed and waned (McGrath, 1984; Moreland, Hogg, & Haines, 1994; Steiner, 1986), a massive literature on small groups has accumulated. As a result, we know much about such diverse topics as group composition, group structure, conflict in groups, group performance, and the ecology of groups (see Levine & Moreland, 1998, for a review of contemporary work). Some of these topics, of course, have received more attention than others. In particular, the ecology of groups, defined as the physical, social, and temporal environments that groups occupy, has been relatively neglected. In this chapter we focus on the temporal environment. After considering how relations between groups and individuals change over time, we examine the conditions under which newcomers can produce change, or innovation, in the groups they enter.

A Model of Group Socialization

To clarify temporal changes in individual–group relations, Moreland and Levine (1982) developed a model of group socialization that analyzes the passage of individuals through groups. The model seeks to describe and explain the affective, cognitive, and behavioral changes that groups and individuals produce in one another over the course of their relationship. Two fundamental assumptions underlie the model. The first assumption is that relationships between groups and individuals change in systematic ways over time, with individuals moving through different membership phases as a function of the length and quality of their experience with the group. The second assumption, which will prove

central to our discussion of innovation, is that groups and individuals exert reciprocal influence on one another, with both parties acting as sources as well as targets of influence.

Before discussing the model in detail, it is important to clarify our use of the term *group*. One issue concerns the types of social aggregates to which the model is relevant. Although aspects of the model are applicable to a wide range of aggregates, the model was designed to apply primarily to small, autonomous, voluntary groups whose members interact on a regular basis, have affective ties with one another, share a common frame of reference, and are behaviorally interdependent. A second issue concerns the reality of groups. When we state that groups carry out certain activities (e.g., evaluating a potential member, feeling commitment to that person), we do not mean to reify the group as an entity apart from its members. Instead, we view a “group” response to an individual as based on the shared views of the people who make up the group. This allows, of course, for the possibility that some group members are more influential than others in determining this response and that members do not always readily achieve consensus.

The dynamic properties of the group socialization model derive from the operation of three psychological processes – evaluation, commitment, and role transition. Evaluation involves efforts on the part of the group and the individual to assess and maximize one another’s rewardingness. Because groups want to accomplish certain goals, they evaluate individuals in terms of how much they facilitate goal attainment. This involves identifying the goals to which the person should contribute, determining the behavioral dimensions on which these contributions will be assessed, developing normative expectations for each dimension, and finally comparing the person’s expected and actual behaviors. To the extent these behaviors do not match, the group may take some form of corrective action to reduce the discrepancy. The individual engages in an analogous evaluation process to assess how well the group meets his or her personal needs.

In addition to evaluating the present rewardingness of their relationship, the group and individual may recall its past rewardingness and anticipate its future rewardingness. Moreover, they may evaluate the past, present, and future rewardingness of their alternative relationships. Feelings of commitment between the group and individual are based on all these evaluations. Thus, commitment is higher when both parties remember their past relationship as more rewarding than previous alternative relationships, perceive their present relationship as more rewarding than current alternative relationships, and expect their future relationship to be more rewarding than future alternative relationships.

Commitment, viewed as the outcome of the evaluation process, can have important consequences for the group and the individual. A group that feels strong commitment to an individual is likely to feel positive affect toward the person, work to fulfill the individual’s expectations and satisfy his or her needs, and try to gain or retain the person as a group member. Similarly, an individual who feels strong commitment to a group is likely to feel positive affect toward group members, work to fulfill the group’s expectations and achieve its goals, and try to gain or maintain membership in the group.

Because evaluation is an ongoing process, the group’s and the individual’s commitment levels change over time. Changes in commitment, in turn, affect the nature of the relationship between the two parties. These changes are governed by decision criteria, or

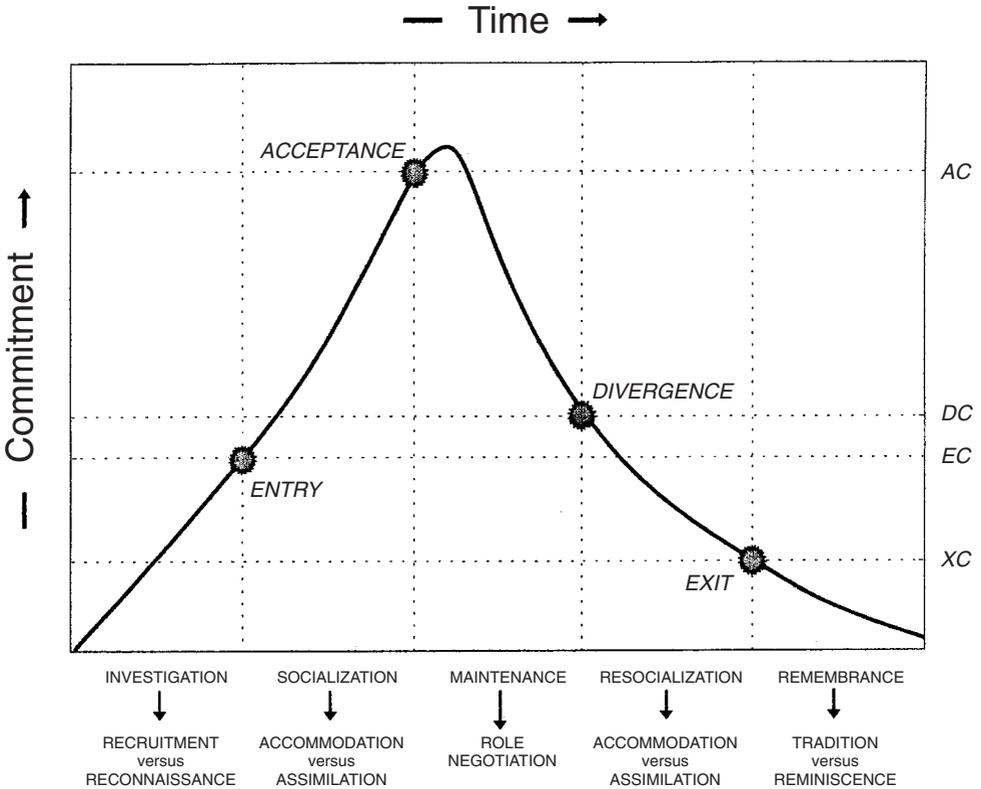


Figure 4.1. The five phases of group membership.

specific levels of commitment signaling that a qualitative change should occur in the relationship between the group and the individual. When either party's commitment level reaches a decision criterion, that party will seek to initiate a role transition, but such a transition will not occur until both parties feel it is appropriate. Following a transition, the individual's relationship with the group is jointly relabeled, and the parties alter their expectations for one another's behavior. In order to clarify to the role occupant and others that something important has happened, role transitions are often marked by public ceremonies ("rites of passage"). Evaluation continues after a role transition, producing further changes in commitment and subsequent role transitions. In this way, the individual can pass through five phases of group membership (investigation, socialization, maintenance, resocialization, and remembrance), separated by four role transitions (entry, acceptance, divergence, and exit). Figure 4.1 illustrates the movement of a hypothetical individual through all five phases of group membership.

During the *investigation* phase, the group and the individual (prospective member) make a decision about whether to establish a relationship. The group engages in recruitment, looking for individuals who might contribute to the attainment of its goals. Similarly, the individual engages in reconnaissance, looking for groups that might contribute to the satisfaction of his or her needs. If both parties' evaluations of one another cause

their commitment levels to rise to their respective entry criteria (EC), then the role transition of *entry* occurs.

After entry, the group and the individual (new member) go through the *socialization* phase of membership. Here the group attempts to change the individual to maximize his or her contribution to its goal attainment. Insofar as the group succeeds, the individual undergoes assimilation. Similarly, the individual attempts to change the group to maximize its contribution to his or her need satisfaction. Insofar as the individual succeeds, the group undergoes accommodation. If the commitment levels of both parties rise to their respective acceptance criteria (AC), then the role transition of *acceptance* occurs.

During the subsequent *maintenance* phase, both the group and the individual (full member) engage in role negotiation. The group attempts to identify a specialized role for the individual (e.g., treasurer) that maximizes his or her contributions to the attainment of its goals, while the individual attempts to find a specialized role that maximizes the satisfaction of his or her needs. If this negotiation succeeds, then both parties' commitment levels remain high. But if it fails and both parties' commitment levels fall to their respective divergence criteria (DC), then the role transition of *divergence* occurs.

Following divergence, the *resocialization* phase of group membership begins. During resocialization, the group tries to restore the individual's contributions to the attainment of its goals, and the individual tries to restore the group's contributions to the satisfaction of his or her needs. Insofar as the parties are successful, assimilation and/or accommodation again occur. If the group's and the individual's commitment levels rise to their respective divergence criteria, then a special role transition (convergence) occurs, in which the individual is returned to full membership. But more often, as illustrated in Figure 4.1, the commitment levels of both parties fall to their respective exit criteria (XC), producing the role transition of *exit*.

Following the individual's departure from the group, the two parties enter the fifth and last membership phase, *remembrance*. Here the group recalls the individual's past contributions to the attainment of its goals, and these memories become part of the group's tradition. Similarly, the individual engages in reminiscence about the group's past contributions to the satisfaction of his or her needs. To the extent the two parties continue to influence one another's outcomes, they may also evaluate their current relationship. These past and present evaluations in turn determine the group's and the individual's commitment to one another, which eventually stabilize at some (usually low) level.

Figure 4.1 is an idealized representation of how the relationship between a group and an individual might change over time, which masks several complexities (see Moreland & Levine, 1982). For example, commitment may change abruptly, rather than gradually. And decision criteria may not be stable (e.g., a group may adopt a higher acceptance criterion at time 2 than time 1), which in turn affects how long individuals spend in a particular membership phase (e.g., socialization). There can also be variability in both the number and order of role transitions (e.g., if the entry and acceptance criteria are equal, then individuals will skip the socialization phase and move directly from prospective member to full member). Finally, the figure assumes that the group and individual have identical commitment levels and decision criteria. When this is not the case, misunderstanding and conflict may result.

The group socialization model has proven useful for analyzing a number of group phenomena (see Levine & Moreland, 1994). These include the psychological processes under-

lying commitment (Moreland, Levine, & Cini, 1993); the strains associated with role transitions (Moreland & Levine, 1984); the factors that facilitate newcomer assimilation into groups (Levine & Moreland, 1991, 1999; Moreland & Levine, 1989); the relationship between group development and group socialization (Moreland & Levine, 1988); and the reciprocal influence of intergroup and intragroup processes on efforts to recruit and retain members (Levine, Moreland, & Ryan, 1998). The group socialization model has also been used to analyze innovation (Levine & Moreland, 1985). In that paper, we briefly discussed how innovation might be produced by people in all five phases of group membership (investigation, socialization, maintenance, resocialization, and remembrance). The present chapter, in contrast, focuses exclusively on the socialization phase of membership, offering a detailed analysis of when and how newcomers produce innovation in groups they have recently joined.

Newcomer Innovation

The socialization phase of group membership has important consequences for both the group and the individual, regardless of its success. From the group's perspective, successful socialization can increase new members' task-related skills and motivation, as well as their commitment to the group, in part because socialization activities facilitate the transmission of group culture (Levine & Moreland, 1991, 1999; Louis, 1980). In contrast, unsuccessful socialization can alienate new members, thereby reducing their contributions to group goals, and can motivate them to leave, thereby producing costly turnover (Bauer, Morrison, & Callister, 1998). From the individual's perspective, successful socialization can provide an opportunity to acquire useful information and skills and a chance to change the group so that it better satisfies personal needs. In contrast, unsuccessful socialization can frustrate the new member's efforts to gain task competence and/or alter the group.

Because both groups and their new members are profoundly affected by the process of socialization, it would not be surprising if both parties found this phase of group membership especially stressful. During socialization, the individual is a quasi-member who has gained a foothold in the group, but is not fully integrated into it. Both the group and the individual realize that their relationship is unstable and must be resolved one way or the other – the individual must either achieve full membership or leave. According to the group socialization model, full membership can only be attained if the commitment levels of the group and the individual rise to their respective acceptance criteria. And this can only happen as a result of some combination of individual assimilation to the group and group accommodation to the individual. The problem, of course, is that the individual is not always willing to exhibit as much assimilation as the group desires, and the group is not always willing to exhibit as much accommodation as the individual desires. The stress that both parties experience during socialization thus derives in large part from the struggle between the group and the individual concerning the amount and type of assimilation and accommodation that should occur. In addition, even if one party is willing to change in order to meet the other's expectations, it may lack the ability to do so, thereby

producing a different kind of stress. For example, an individual might desperately want to succeed on a group-assigned task, but lack the physical or mental resources to do so. Similarly, a group might want to give a valued newcomer a large salary increase, but lack the financial resources to do so. Thus, the stress associated with assimilation and accommodation may be based on ability as well as motivation problems.

A large literature exists on socialization, much of it devoted to the fate of newcomers in organizations (Ashford & Taylor, 1990; Bauer et al., 1998; Fisher, 1986; Saks & Ashforth, 1997; Van Maanen & Schein, 1979; Wanous & Collela, 1989). Although we will borrow from this literature where appropriate, our focus here is on small groups, which are increasingly recognized as a critical context for organizational socialization (Anderson & Thomas, 1996; Feldman, 1989; Jablin, 1987; Major, Kozlowski, Chao, & Gardner, 1995; Moreland & Levine, in press). Until recently, most of the work on socialization in both organizations and small groups was characterized by a restricted social perspective. During socialization, organizations and groups were assumed to be sources of influence, whereas new members were assumed to be targets. Recently, however, there has been increasing recognition that newcomers play an active role in their socialization and can produce changes (intentional or unintentional) in their organizations or groups (Bauer et al., 1998; Feldman, 1994; Levine & Moreland, 1985; Saks & Ashforth, 1997; Sutton & Louis, 1987).

In the remainder of this chapter we discuss the mechanisms that underlie newcomer innovation in groups. Although the term “innovation” is often used to refer to the intentional introduction of ideas designed to improve group performance (cf. West & Farr, 1990), newcomers sometimes produce changes in a group without intending to do so. Moreover, regardless of newcomers’ goals, the changes they elicit can be negative as well as positive (Feldman, 1994). In the following analysis, we adopt a broad definition of innovation, defining it as any significant change in the structure, dynamics, or performance of a group (Levine & Moreland, 1985).

Unintended innovation

As suggested above, newcomers sometimes alter groups without intending to do so. For example, newcomers who are trying hard to assimilate, with no thought of producing accommodation, may inadvertently change the group in some way. Alternatively, newcomers who are trying to produce accommodation on one dimension may (in addition or instead) elicit change on another dimension.

Unintended innovation can occur even before newcomers enter the group, as a result of oldtimers’ expectations about their future responsibilities. If oldtimers believe they must soon transmit group culture (the group’s shared thoughts and customs) to newcomers, they may be motivated to think carefully about aspects of culture that they normally take for granted (cf. Feldman, 1994). This reflection could alter both the group culture itself and the socialization mechanisms used to transmit it. For example, oldtimers might discover inconsistencies between shared thoughts and customs that they never noticed before, which could lead them to engage in cognitive work designed to reconcile these inconsistencies. These efforts in turn could produce changes in group culture, such

as “forgetting” of inconsistent cultural elements. Oldtimers’ expectation that they must transmit cultural information is also likely to produce more organized and polarized cognitive structures regarding this information (Guerin & Innes, 1989; Zajonc, 1960). Finally, even if no inconsistencies are discovered, oldtimers may anticipate that certain cultural elements will be hard to transmit to newcomers. This perception, in turn, may motivate oldtimers to invent new ways of imparting cultural knowledge, which will alter how socialization is carried out.

There is also reason to believe that actually imparting cultural information can affect oldtimers’ understanding of that information. For example, Higgins and his colleagues have demonstrated that communicating a message to an audience can influence a speaker’s memory for message-relevant information (Higgins, 1992). This “saying is believing” effect is due, at least in part, to speakers’ desire to establish shared reality with their audience (Higgins, 1999). Thus, it seems likely that oldtimers’ memory for cultural information they previously communicated to new members will be influenced by how they encoded this information during transmission. Such communication-induced changes in knowledge will, over time, alter the content of the group culture.¹

Two factors are likely to influence how much oldtimers’ cultural knowledge changes as a result of imparting this knowledge to newcomers – their motivation to enculturate newcomers and their self-perceived ability to do so. We expect that higher motivation will lead to greater effort to transmit cultural knowledge, which in turn will produce changes in that knowledge when transmission involves cognitive work (e.g., if cultural inconsistencies must be resolved or new ways of transmitting information must be invented). Oldtimers’ motivation to enculturate new members should be high when the group has recently failed and when new members possess skills the group needs.

In addition, we expect that lower self-perceived ability will lead to greater change in cultural knowledge as a function of transmitting this knowledge, at least when cultural inconsistencies must be resolved or new ways of imparting information must be invented. This is because oldtimers with low confidence in their ability to transmit cultural knowledge will process this information in a relatively thoughtful (or controlled) manner, whereas those with higher confidence will process this information in a relatively thoughtless (or automatic) manner. The more thoughtful their information processing, the more likely oldtimers are to experience cognitive change. Oldtimers’ self-perceived ability is likely to be low when the group culture is weak (e.g., knowledge is not codified), their task and social skills are low, they had little prior contact with new members, and new members seem resistant to enculturation.

Unintended innovation may also occur as a result of the evaluation process (described earlier), in which oldtimers assess and seek to maximize new members’ contributions to group goal attainment. For example, newcomers who repeatedly violate group expectations may find that oldtimers reduce their responsibilities, monitor their behavior more often, and punish their mistakes more harshly. Newcomers who consistently meet or exceed group expectations may elicit exactly the opposite reactions. Both sets of responses change the group by altering the time and energy oldtimers expend on socializing newcomers. The changes induced by “bad” and “good” newcomers may even extend beyond the particular individuals who elicited these changes. For example, one bad newcomer may cause oldtimers to monitor other newcomers more closely, for fear they will imitate their colleague’s misbehavior. And a set of bad newcomers may lead oldtimers to con-

clude that they should recruit better people, which in turn will cause them to adopt a higher entry criterion for prospective members.

Commitment, the outcome of the evaluation process, can also influence unintended innovation on the part of newcomers. As we noted earlier, groups are more likely to accommodate to newcomers who elicit higher levels of commitment. If so, then oldtimers may be quite sensitive to the presumed needs of such newcomers and may try to satisfy these needs without any prompting. Such efforts will please newcomers if oldtimers guessed right (How nice they knew I would love a mink coat!), but will confuse or irritate newcomers if they guessed wrong (Why on earth would they think I wanted the skin of a poor, dead animal?). In either case, efforts to reward newcomers will absorb resources (e.g., time, energy, money) that could have been used for other purposes. For example, rather than attempting to please Newcomer A, oldtimers might have tried to please Newcomer B, whose anger at being ignored could lead him or her to leave the group, thereby weakening it. Or the resources used to please Newcomer A might have been used to recruit a promising prospective member, whose eventual contributions to the group would far exceed those of Newcomer A. Our general point is that commitment to a particular person can lead to actions that change the group for good or ill.

The resources that the group expends during socialization are affected by factors besides commitment to newcomers. One such factor is the relative size of the newcomer contingent. The greater the number of newcomers relative to oldtimers, the more effort oldtimers must expend in socializing the newcomers, which in turn may reduce the group's ability to achieve other goals (cf. Chapin, 1957). The specific socialization tactics oldtimers use may also differ as a function of the relative number of newcomers. For example, as the size of the newcomer contingent increases, oldtimers may be more likely to employ collective tactics (providing a common set of experiences for all newcomers) rather than individual tactics (providing different experiences for different newcomers) (Van Maanen & Schein, 1979). Because these two kinds of tactics make different demands on oldtimers, changes in the number of newcomers entering the group can provoke changes in the procedures used to socialize these people.

Besides varying in number, newcomers can also vary on other characteristics that influence how oldtimers conduct socialization. These include demographic characteristics (e.g., age, race, sex), personality traits (e.g., adaptability, autonomy, self-esteem), group-relevant abilities and knowledge, and motivation to gain acceptance (see Levine & Moreland, 1991, 1999; Moreland & Levine, 1989). Evidence suggests, for example, that groups have an easier time socializing young, adaptable newcomers who are familiar with the group before they join and who are highly motivated to become full members. Recently, there has been much interest in how the diversity of group members on such dimensions as age, sex, race/ethnicity, organizational and group tenure, and educational and functional background influences the performance of work groups (Moreland, Levine, & Wingert, 1996; Neale, Mannix, & Gruenfeld, 1998; Williams & O'Reilly, 1998). Special attention has been given to the impact of relational similarity between newcomers and oldtimers on the process and outcome of socialization (Arrow, 1998; Jackson, Stone, & Alvarez, 1993; Lau & Murnighan, 1998). For example, Jackson et al. (1993) offered several propositions about how newcomers' and oldtimers' demographic similarity influences oldtimers' behavior during socialization. They suggested, for example, that oldtimers are more attracted to similar than dissimilar newcomers and are

more motivated to integrate similar newcomers into the group. This causes oldtimers to direct more deliberate communication to similar newcomers and to consciously provide them with more evaluative information. Consistent with the notion that similar newcomers are more attractive to oldtimers and receive more help from them, Arrow (1998) found that newcomers of the same sex as current group members felt they fit in more quickly than did newcomers of the opposite sex. Interestingly, oldtimers did not share these perceptions, viewing both dissimilar and similar newcomers as fitting in quite well.

Our discussion so far has focused on how oldtimers' efforts to socialize newcomers can produce unintended innovation. But such innovation can occur through other mechanisms as well. For example, newcomers can change the group by altering existing relationships among oldtimers. When a newcomer is viewed negatively (e.g., because he or she wants to alter cherished group traditions), oldtimers may become more cohesive and resist the person's efforts to change the group (Merei, 1949). Conversely, when a newcomer is viewed positively (e.g., because he or she has valuable skills), oldtimers may adjust their relationships in ways that facilitate the person's ability to innovate (Fine, 1976; Ziller & Behringer, 1960). Newcomers may also elicit conflict between different factions of oldtimers, each of which seeks their allegiance (Sutton & Louis, 1987; Ziller, 1965). This conflict can harm the group in several ways. For example, oldtimers' commitment to the group and willingness to work for it may diminish, and competing factions may waste valuable resources in trying to recruit newcomers. In extreme cases, the level of conflict may become so intense that the group dissolves. Finally, groups that must adapt to the frequent entry of newcomers (and exit of oldtimers) may change their norms and role systems, for example by placing greater emphasis on seniority (cf. Insko, Thibaut, Moehle, Wilson, Diamond, Gilmore, Solomon, & Lipsitz, 1980; Ziller, 1965).

Besides changing relationships among oldtimers of the group they are entering, newcomers can unintentionally alter this group by changing how it relates to outgroups. In some cases, these changes make life harder for the group. For example, Levine, Moreland, and Ryan (1998) discuss how intergroup competition for members can sour relations between groups and force them to devote more resources to gaining and retaining members. In other cases, these changes make life easier for the group. For example, if newcomers to Group A already belong to Group B, then relations between the groups may improve, with a concomitant decline in the resources needed to wage intergroup conflict (cf. Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

Ironically, some of the techniques that newcomers use to facilitate their assimilation to the group can inadvertently cause the group to accommodate to them. Reversing an earlier emphasis on newcomers as passive recipients of socialization practices, organizational researchers have recently given more attention to "proactive socialization," in which newcomers take an active role in facilitating their adaptation to the organization (Ashford & Taylor, 1990; Miller & Jablin, 1991; Reichers, 1987). Most of the work on proactive socialization has focused on information seeking and acquisition (e.g., Comer, 1991; Morrison, 1993; Ostroff & Kozlowski, 1992), although some research has been done on other tactics, such as general socializing, networking, and behavioral self-management (Ashford & Black, 1996; Saks & Ashforth, 1996). Opinions differ as to whether proactive socialization has strong or weak effects on newcomer assimilation (Bauer et al., 1998; Saks & Ashforth, 1997). However, our interest here is the unintended impact of proac-

tive socialization tactics on group accommodation, an issue that has not received much research attention (Saks & Ashforth, 1997).

How might proactive socialization tactics inadvertently produce group accommodation? In the case of information acquisition, certain newcomer efforts to acquire information (e.g., asking questions about sensitive issues, requesting confidential files, looking over oldtimers' shoulders as they work) may be perceived as inappropriate. To discourage such behavior, oldtimers will engage in various actions (e.g., reprimanding newcomers, monitoring their behavior) that take time and energy away from other tasks, which in turn may reduce group performance. When newcomers' information-seeking behavior is perceived as threatening to overall group welfare (e.g., when curious newcomers seek "secret" information), groups may develop special roles (e.g., security officers) whose job it is to guard sensitive information, assign security clearances, monitor access to information, and so on (cf. Ancona & Caldwell, 1988; Messick, 1999). Not only can such roles absorb significant group resources, but their very existence can alter group dynamics. For example, when information is systematically withheld from newcomers, oldtimers must monitor their conversations with one another to insure that newcomers do not overhear them. To avoid this problem, oldtimers may spend most of their time with one another, avoiding newcomers whenever possible and thereby weakening their power to socialize these people.

Intended innovation

Although newcomers often produce unintended changes in the group they have joined, this is not the only way innovation occurs. In many cases, newcomers actively seek to produce accommodation in the group and are able to achieve that goal. It should not be surprising that some determinants of unintended innovation also affect innovation that is intended.

One such determinant is the group's commitment to its newcomers. As we noted earlier, groups are more likely to accommodate to newcomers who elicit higher commitment. Group commitment is high when newcomers are perceived to possess certain demographic characteristics and personality traits, valuable abilities and knowledge, and the motivation to gain acceptance (Levine & Moreland, 1991, 1999; Moreland & Levine, 1989). Newcomers who elicit high commitment for any of these reasons will find it relatively easy to produce intended change in the group.²

Another factor underlying group commitment to newcomers is their external social status (Moreland & Levine, 1989; also see Ridgeway, this volume, chapter 15). There seem to be two reasons for this. First, because high-status newcomers bring valuable resources to the group (e.g., expertise, prestige), they are viewed as more instrumental to attaining group goals than are low-status newcomers (cf. Zander & Cohen, 1955). Second, high-status newcomers know and use more effective entry behaviors than do low-status newcomers (Putallaz & Wasserman, 1990). High-status newcomers may not only be excused for deviating from group norms (cf. Wahrman, 1970; Wiggins, Dill, & Schwartz, 1965), but they may even be rewarded for doing so, as long as their deviation facilitates group goal attainment (cf. Suchner & Jackson, 1976).

Moreover, when newcomers have enough status to assume leadership roles in the group, they may be expected to produce innovation, particularly when the group has been unsuccessful (cf. Coser, 1962; Homans, 1974). Research on executive succession indicates that new executives do indeed introduce changes in the firms they join (Kesner & Sebora, 1994), and this may be especially likely when they fulfill the prototypical expectations of leaders who are worthy of influence (Kenney, Schwartz-Kenney, & Blascovich, 1996).

But the ability to produce innovation is not enough. If newcomers are to change the group, they must first be motivated to do so. Innovation attempts are more likely when newcomers want to change the group and believe their efforts will succeed. In general, newcomers whose commitment to the group is low (because their needs are not being met) want to change the group more than do newcomers whose commitment is high. However, because group and individual commitment levels are typically positively correlated, newcomers who feel low commitment to the group will probably assume the group feels low commitment to them and hence would be unreceptive to their innovation attempts. If so, then these individuals may not try to alter the group even though they would like to see it change.

Another determinant of unintended innovation that also affects intended innovation is the relative size of the newcomer contingent. In general, role expectations for newcomers emphasize anxiety, passivity, dependence, and conformity (Moreland & Levine, 1989). Because newcomers do not want to violate these expectations, they often avoid behaviors that might be viewed as assertive and hence make little effort to produce accommodation in the group. This inhibition can be overcome, however, when two or more newcomers enter the group together. Having social support from others reduces conformity to group pressure (Allen, 1975) and emboldens newcomers to demand and produce accommodation (Becker, 1964; Dunham & Barrett, 1996; Van Maanen, 1984). Thus, newcomers who face socialization together often experience a sense of ingroup solidarity, which causes them to become more confident of their views, less fearful of group retaliation, and more assertive in pressing their case.

Finally, some of the mechanisms by which newcomers produce unintended innovation can be transformed into tactics for producing intended innovation. For example, newcomers can attempt to alter relationships among oldtimers (e.g., by creating or exacerbating conflicts) in the hope that a "weakened" group will show more accommodation. Or newcomers can employ proactive socialization tactics (e.g., asking hard questions about group practices) designed to make salient weaknesses in the group and thereby increase oldtimers' willingness to accommodate.

Newcomers can also use a variety of additional tactics for producing intended innovation that do not have clear parallels in unintended innovation. One such tactic involves the timing of innovation efforts. In his research on idiosyncrasy credit, Hollander (1960) found that individuals attempting to change a group's procedural norms were less successful if they tried to initiate innovation immediately after entering the group than if they conformed for a while before suggesting any changes. Extrapolating from these findings, newcomers who attempt to produce innovation immediately after entry (when group commitment to them is low) are likely to be less successful than those who wait until later (when group commitment is higher).

Another tactic for producing innovation is behavioral consistency, which has been studied in the context of minority influence. According to Moscovici (1976, 1985; see Martin & Hewstone, this volume, chapter 9), a minority that consistently maintains its position shows confidence in and commitment to that position and signals its refusal to compromise. Although consistency is not always effective (Levine, Saxe, & Harris, 1976; Levine, Sroka, & Snyder, 1977) and too much consistency (i.e., rigidity) can backfire (Mugny, 1982), both objective consistency (Moscovici, Lage, & Naffrechoux, 1969) and perceived consistency (Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994) often increase minority influence. Moscovici assumes that consistent minorities produce innovation by creating cognitive conflict in majorities (cf. Nemeth, 1995; Perez & Mugny, 1996). By refusing to compromise, a minority generates uncertainty about the correct position, which in turn leads the majority to consider and eventually adopt the minority's position (see Levine & Thompson, 1996, and Martin & Hewstone, this volume, chapter 9, for a fuller discussion of minority influence). In addition to influencing minority innovation, cognitive conflict also plays an important role in other group phenomena, including strategic decision making and groupthink (e.g., Amason & Schweiger, 1997; Jehn, 1997; Turner & Pratkanis, 1997; but see O'Reilly, Williams, & Barsade, 1998).

Given that newcomers are typically also minorities by virtue of being outnumbered by oldtimers (Gruenfeld & Fan, 1999), newcomers who maintain a consistent position and create cognitive conflict in oldtimers are likely to produce more innovation than those who do not. An important caveat must be noted, however. Because minorities are more effective in producing private influence than public influence (Wood et al., 1994), newcomers will find it easier to change oldtimers' attitudes than behaviors. This is problematic for the obvious reason that newcomers often desire behavioral accommodation on the part of oldtimers.

Waiting to introduce an innovation until they have earned idiosyncrasy credits and presenting their position in a consistent manner both involve newcomers' efforts to convince oldtimers that their position is valid. In addition to these "informational" tactics, newcomers can use punishment/reward tactics and compositional tactics (cf. Levine & Kaarbo, in press). Punishment/reward tactics are applicable when newcomers have power in the group because oldtimers need their contributions in order to attain important goals. In such situations, newcomers can threaten to reduce group performance by either passive (e.g., low effort) or active (e.g., sabotage) means. Newcomers can also threaten to withdraw from the group by either simply leaving or forming a competing group (cf. Ziller, 1965). Finally, newcomers can threaten to increase outside pressure on the group to meet their demands, to discredit the group to outsiders (e.g., by whistleblowing), or to discourage prospective members from joining the group. These punishment tactics imply parallel reward tactics, of course. Newcomers can also produce innovation by promising to enhance group performance, to remain in the group for a long time, to encourage prospective members to join, and so on.

Compositional tactics do not involve active attempts to influence oldtimers, but instead involve efforts to alter the group in ways that increase the likelihood of accommodation (cf. Hoyt, 1997; Kaarbo & Beasley, 1998). These tactics are based on the assumption that larger newcomer factions are more likely to produce accommodation.

There are several ways in which newcomers might increase the relative size of their faction. These include convincing the group to recruit more newcomers, engineering the voluntary withdrawal or expulsion of some oldtimers, and shifting the locus of group decision making to a subset of oldtimers who are sympathetic to newcomer demands.

The success of newcomers' tactics for producing innovation is constrained by characteristics of the group they are joining. Six such characteristics are particularly important. The first is group development. Because relationships among group members stabilize over time and the group's structure and dynamics become more complex (Tuckman, 1965), resistance to newcomer innovation should be greater in later than in earlier stages of group development (Moreland & Levine, 1988; but see Worchel, Grossman, & Coutant, 1994; Worchel & Coutant, this volume, chapter 19). Several studies indicate that older groups are indeed less accommodating to newcomers than are younger groups (Katz, 1982; Merriam, 1949; Ziller & Behringer, 1961). A second group characteristic that affects newcomer innovation is openness (Ziller, 1965). Open groups have unstable memberships with frequent personnel turnover, whereas closed groups have stable memberships with little or no turnover. Because open groups expect to receive newcomers, they maintain a more flexible structure than do closed groups. As a result, open groups show more accommodation to newcomers (Ziller, Behringer, & Jansen, 1961).

Group performance is a third characteristic that influences newcomer innovation. Members of successful groups are usually satisfied with the group and reluctant to make changes in it. In contrast, members of unsuccessful groups are usually dissatisfied with the group and willing (or even eager) to change it. For this reason, failing groups show more accommodation to newcomers than do successful groups (Ziller & Behringer, 1960). A fourth group characteristic that affects newcomer innovation is staffing level. An understaffed group has fewer members than it needs to perform its tasks, whereas an overstaffed group has more members than it needs (Barker, 1968). Because understaffed groups are more eager to recruit and retain new members than are overstaffed groups, they are more receptive to newcomers' efforts to produce accommodation (Cini, Moreland, & Levine, 1993; Petty & Wicker, 1974). A fifth group characteristic that influences newcomer innovation is cohesion (Hogg, 1992). Compared to members of low-cohesive groups, members of high-cohesive groups are happier with the group the way it is. Therefore, they are more likely to reject oldtimers who deviate from group norms (Schachter, 1951) and to resist innovation efforts on the part of newcomers (Brawley, Carron, & Widmeyer, 1988; Merriam, 1949; Mills, 1957).

Finally, group norms can influence a newcomer's ability to produce innovation. Some groups have norms that discourage dissent (Janis, 1982; Roethlisberger & Dickson, 1939), whereas others have norms that permit and even encourage it (Coser, 1962; Deconchy, 1985). Evidence indicates that these norms affect the likelihood that people holding minority views will express their opinions and will influence others (Moscovici, 1976; Moscovici & Lage, 1978). Extrapolating these findings to the newcomer context, groups with norms permitting dissent should be more receptive to newcomers' innovation efforts than should groups with norms discouraging dissent (West, 1990).

Group norms favoring or opposing dissent may also affect how newcomers are socialized, with implications for their subsequent ability to produce innovation. Work on the relationship between socialization tactics and newcomer responses has been heavily influ-

enced by Van Maanen and Schein's (1979) analysis of six dimensions of socialization. In collective socialization, newcomers are processed together and have common experiences; in individual socialization, newcomers are processed singly and have unique experiences. In formal socialization, newcomers are segregated from oldtimers and treated in special ways; in informal socialization, newcomers are treated similarly to oldtimers and learn their roles "on the job." In sequential socialization, newcomers go through a given series of discrete and identifiable steps; in random socialization, the steps are ambiguous or continually changing. In fixed socialization, newcomers receive precise information about when socialization will end; in variable socialization, no such information is given. In serial socialization, experienced oldtimers serve as role models for newcomers; in disjunctive socialization, role models are absent. Finally, in investiture socialization, newcomers' personal characteristics are affirmed; in divestiture socialization, newcomers' personal characteristics are denigrated.

Jones (1986) organized these socialization tactics into two clusters – "institutionalized" tactics (collective, formal, sequential, fixed, serial, investiture) and "individualized" tactics (individual, informal, random, variable, disjunctive, divestiture). He also argued that institutionalized tactics produce custodianship (in which newcomers accept traditional role expectations), whereas individualized tactics produce innovation (in which newcomers challenge these expectations). Subsequent research has provided some support for these hypotheses (e.g., Ashforth & Saks, 1996; Black, 1992; Black & Ashford, 1995; Mignerey, Rubin, & Gorden, 1995). Although little is known about why groups use particular socialization tactics (Bauer et al., 1998), it would not be surprising if institutionalized and individualized tactics were employed by groups with norms favoring custodianship and innovation, respectively.

In addition to characteristics of the group, environmental factors can also affect the ability of newcomers to produce accommodation (Moreland & Levine, 1989; see also Arrow & McGrath, 1993, 1995). Some of these factors involve dangers and stresses that the group must handle. If the environment is highly dangerous (e.g., the group encounters life-or-death situations where coordinated action is essential to survival), oldtimers often demand fast and complete assimilation by newcomers and ignore or punish any suggestions for accommodation (Van Maanen, 1973; Vaught & Smith, 1980). In contrast, if the situation is stressful without being highly dangerous (e.g., the group encounters difficulties in completing an important but not life-threatening task), oldtimers' frustration and reduced sense of efficacy may make them more receptive to change (cf. Gersick & Hackman, 1990). Other environmental characteristics that can affect newcomer innovation are newcomers' and oldtimers' opportunities for alternative relationships. To the extent newcomers can leave the group and join a more attractive one, they can force more accommodation from oldtimers. Conversely, to the extent oldtimers can eject newcomers and replace them with more attractive ones, they will exhibit little accommodation. These effects can be explained in terms of commitment (cf. Farrell & Rusbult, 1981). A final environmental characteristic that can influence newcomer innovation is the presence of third parties, defined as individuals or groups who have a relationship with newcomers or oldtimers and can thereby influence them (Settoon & Adkins, 1997). Third parties can affect accommodation in several ways, for example by encouraging newcomers to demand more or less change in the group, by persuading oldtimers to honor or resist newcomers' inno-

vation efforts, and by providing social comparison information about the amount of accommodation newcomers produce in other groups.

Future Directions

A number of issues regarding newcomer innovation deserve further investigation. Two of these seem particularly important. The first concerns the ability of different types of newcomers to produce accommodation in the groups they join. In this chapter, we focused on people who recently entered a group where they expected to remain for some time, who did not belong to similar groups in the past, and who were not replacing former members. Other types of newcomers also exist, however (Arrow & McGrath, 1995). These include visitors, who expect to remain in the group for only a short time; transfers, who recently belonged to a similar group; and replacements, who take the place of former members. These different types of newcomers may vary in their ability to produce innovation. For example, because visitors are unlikely to contribute to long-term group goals, they will probably elicit low commitment from oldtimers and hence find it difficult to change the group (Gruenfeld & Fan, 1999; Gruenfeld, Martorana, & Fan, in press).³ In contrast, because transfers often have expertise on the group task, they may elicit high commitment from oldtimers and hence find it easy to change the group. Moreover, as Ziller (1965) suggested, newcomers with experience in similar groups can make intergroup comparisons that reflect positively or negatively on the group they have just joined (cf. Schuetz, 1944). These comparisons, in turn, can cause oldtimers to evaluate their group more often and on new dimensions, perhaps producing “objective group awareness” (cf. Wicklund, 1975). Depending on the outcome of this evaluation process (positive or negative), oldtimers’ commitment to the group and motivation to achieve group goals can either increase or decrease. Finally, replacements often elicit either more or less commitment than their contributions warrant, depending on the performance of the people they are replacing. Due to contrast effects, newcomers following low-performing members are often overvalued, whereas newcomers following high-performing members are often undervalued. Because newcomers’ ability to produce accommodation depends on how much commitment they elicit, those replacing low-performing members should be more effective than those replacing high-performing members.

A second unresolved issue concerns newcomers’ relations with people in various phases of group membership. Our discussion focused on newcomers’ relations with full members, who are generally the targets of innovation efforts. Although we touched briefly on how newcomers might collaborate among themselves to elicit accommodation from full members, we did not discuss newcomers’ relations with prospective, marginal, or ex-members. Future work might profitably explore how these kinds of relations affect newcomers’ ability to produce innovation. For example, in pressuring full members to change the group, newcomers may form alliances with like-minded prospective members whom the group wants to recruit. Marginal members may also prove to be useful allies, because they have strong grievances against the group and, having little to lose, are willing to fight for their views. Finally, to the extent ex-members still elicit high commitment from the group, newcomers can benefit from their support.

Notes

- 1 In addition, “showing the ropes” to newcomers may improve the work-related attitudes and performance of marginal group members (Feldman, 1994; Sutton & Louis, 1987).
- 2 It has also been hypothesized that newcomers who are demographically dissimilar to oldtimers can produce role innovation when they are supported by other group members (Jackson et al., 1993).
- 3 The impact of visitors may be more complicated, however. In discussing the ability of temporary workers to produce innovation, Bauer et al. (1998) noted that they are often socialized using individualized tactics, which should enhance innovation, but at the same time have low commitment to the organization, which should reduce innovation.

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CHAPTER FIVE

Group Performance in Collaborative and Social Dilemma Tasks: Progress and Prospects

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1 Introduction

Over a century ago, the first questions tackled by the nascent discipline of social psychology were questions about group performance. Late in the 19th century, Ringelman (1913; Kravitz & Martin, 1986) studied how the size of a performance group affected its productivity, and laid the foundation for 25 years of research on group motivation and social loafing at the end of the 20th century. Triplett (1898) investigated the effects of the presence of coworkers on individual performance, and thereby broke ground for several decades of research on social facilitation (cf. Baron, 1986; Cottrell, 1972; Zajonc, 1965). Likewise, the origins of many other core issues in our discipline lie in early, seminal research on group performance, including the contrast of individual versus group productivity (Shaw, 1932), social influence processes (Sherif, 1936), and leadership (Lewin, Lippitt, & White, 1939).

Although our discipline's interest in groups has fluctuated (cf. Steiner, 1974, 1986) and diversified in many ways, the questions of how people collaborate to do work and solve common problems remain fundamental questions for social psychology. The goal of the present chapter is to review recent progress on these questions, noting at times some promising directions for further research. We will focus on two broad group performance topics. The first is performance in collaborative work groups. The second is cooperation in contexts where individual and group interests are in conflict, that is, in social dilemma contexts. Our rough definition of "recent" will be the last half-dozen or so years, concentrating on work done since the most recent comprehensive reviews of

these topics (cf. Komorita & Parks, 1994, 1995; Levine & Moreland, 1990, 1998). Our review will necessarily be somewhat selective. It will focus more on social psychological work than on similar work within sister disciplines (e.g., see McGrath & Argote, this volume, chapter 25 for relevant work within organizational psychology). And it will (predictably) focus on those questions which we find particularly interesting.

2 Group Performance

2.1 Social facilitation

Collaborative work in groups often entails the physical presence of others. Hence, the effect of the presence of others on performance, one of social psychology's oldest questions, remains relevant for the study of group performance. Since Zajonc's (1965) classic paper, which proposed a cogent theoretical explanation for such effects, most attention has been devoted to two issues: (a) Identifying the minimal features of "mere" presence sufficient to alter individual performance; and (b) developing alternative theoretical accounts for such effects. Among the latter have been theoretical models linking the presence of others to uncertainty (Zajonc, 1980), affectively significant outcomes (e.g., Cottrell, 1972), self-presentation concerns (Bond, 1982), self-awareness (Carver & Scheier, 1981), attentional conflict or distraction (Baron, 1986), and attentional overload (Manstead & Semin, 1980; see Baron, Kerr, & Miller, 1992 or Guerin, 1993 for reviews). To speak to the former issue (i.e., what constitutes "mere" social presence?), Guerin (1993) excluded from the sizable social facilitation literature all studies in which the "others" (i.e., those present, either as passive observers or coactors) had any interaction with the subject or in which the experimenter was in the subject's presence during performance. Of the 18 remaining studies, Guerin reported that 11 found mere presence effects, but 7 did not. Interestingly, 9 out of the 11 studies which obtained mere presence effects had the other in a position that was very hard for the subject to monitor (e.g., the other was behind the subject). And of the 7 studies that did not obtain mere presence effects, 5 were coaction studies or studies in which the other was easily monitored; under such conditions, the behavior of the other is quite predictable. Hence, Guerin's review suggests that it may be the unpredictability of the other's presence which is crucial, consistent with both Zajonc's (1980) and Baron's (1986) theoretical models.

Modern technology raises the possibility of electronic as well as face-to-face presence. Aiello and his colleagues (e.g., Aiello & Kolb, 1995; Aiello & Svec, 1993) contrasted individual performance under three conditions: Alone; in the physical presence of an other; and electronic monitoring (viz., the performance of each participant would be recorded onto a computer database). They also manipulated task difficulty or subject skill level. Electronic monitoring had the same (and a comparably large) effect as the physical presence of an other – facilitating performance on a simple, well-learned task and curtailing performance on complex, poorly learned tasks. They also found that such electronic-presence effects could be attenuated by increasing subjects' perceived anonymity (by saying that everyone's performance would be pooled within the computer database).

2.2 Comparisons of individual and group performance

The classic (e.g., Shaw, 1932) question, “which is more productive, individuals or groups?” has (appropriately) been supplanted in social psychology with the question suggested by Steiner (1972), “do groups do as well as they could, and when they don’t, to what can we attribute their suboptimality?” There has been recent progress on the latter question for at least two substantive topics: Collective induction and group brainstorming.

2.2.1 Collective induction. Collective induction refers to the “cooperative search for descriptive, predictive, and explanatory generalizations, rules, and principles” (Laughlin, 1996). For over a decade, Laughlin and his colleagues have pursued a careful program of research focusing on how individuals and groups compare at induction tasks. All of this work has used a task in which performers (individuals or groups) are first given an exemplar of some to-be-discovered rule involving standard playing cards. So, for example, if the rule were “even diamonds alternate with odd spades,” subjects might first be shown the “four of diamonds.” Subjects are asked to choose a new card, are told whether or not the new card fits the rule, and then are asked to generate a hypothesis about what the rule might be. They then continue the process of card selection, feedback, and hypothesizing for several rounds (until a final hypothesis is solicited). In these studies, Laughlin and his colleagues have carefully controlled the amount and type of information available to individual and group performers, in order to analyze how group members select and combine information to perform this task.

Laughlin (1996) has proposed a set of postulates which both summarize this program of research and constitute a theory of how groups perform induction (and conceptually similar) problems. Some of his postulates incorporate ideas first developed in earlier work on social combination processes. These include the distinction between intellectual and judgmental tasks, the criteria for demonstrably correct solutions, and the notion that the number of members in the group that is sufficient and necessary to determine a collective decision is inversely proportional to the demonstrability of the proposed response (cf. Laughlin & Ellis, 1986). To these, Laughlin adds postulates specific to collective induction. One suggests that inductive tasks have both intellectual and judgmental features. For example, determining whether a particular hypothesis is or is not consistent with the available evidence is an intellectual task, whereas choosing among plausible alternative hypotheses (all of which fit the data) may be largely judgmental. Another postulate states that if at least two group members propose the correct or another plausible hypothesis, the group will generate a collective decision using one of these plausible alternatives. However, if this condition is not met, the group will select among all of the proposed hypotheses. Yet another postulate states that if the majority of members suggest the same hypothesis, the group will initiate a majority social combination process (voting); otherwise, the group will follow a proportionality process (turn taking) and propose an emergent hypothesis with the probability of $1/(H + 1)$, where H is the number of proposed hypotheses.

Laughlin’s model suggests that when the unique, “correct” hypothesis is suggested in a group, the social combination process insures that it will be retained in the group

through subsequent empirical trials and will eventually become the group's final hypothesis. The same processes make it extremely unlikely that the correct hypothesis will "emerge" somehow in a group where none of the group members propose it.

In a recent contribution of this program of research, Laughlin, Bonner, & Altermatt (1998) compared the performance of four-person groups versus the performance of four independent individuals on an information-rich induction problem. Specifically, group performance was compared to the performances of the best, second best, third best, and worst individual performer. Laughlin et al. (1998) found that both groups and the highest-ranking individual had higher proportions of correct than nonplausible hypotheses, and these two conditions did not differ from each other on the number of correct hypotheses that were derived. On the other hand, the second, third, and fourth ranked individuals had higher proportions of nonplausible hypotheses than correct hypotheses and were significantly less likely to arrive at the correct hypothesis than the groups or the best individual. Therefore, it appears as though the four-person group performed at the level of the best individual.

These new findings may be contrasted with earlier studies comparing individuals and groups at induction tasks. Laughlin, VanderStoep, and Hollingshead (1991) showed that when groups were presented with one, two, three, or four arrays of cards, they performed at the level of the second ranked individual. However, when the groups were presented with five arrays of cards, the groups performed at the level of the highest-ranking individual. Laughlin et al. (1998) have concluded that groups will perform at the level of the best individual on information-rich induction problems because of groups' greater capacity to process large amounts of information. They further suggest that groups will therefore be increasingly effective relative to individuals as the amount of information and complexity of the problem increases.

2.2.2 Face-to-face brainstorming. Osborne (1953) first suggested that, properly instructed, face-to-face groups could generate more ideas than equally large sets of coacting individuals. Osborne prescribed that such brainstorming groups stress quantity over quality, allow unusual and creative ideas, incorporate and elaborate on the ideas suggested by the others in the group, and forgo analysis and criticism of the ideas that are mentioned. Systematic study of brainstorming groups since Osborne's provocative work has not generally supported his claims. Yes, brainstorming groups are more productive than groups that do not follow the brainstorming rules (Oxley, Dzindolet, and Paulus, 1996; Parnes & Meadows, 1959), but they are nearly always less productive than comparable nominal groups (i.e., the same number of individuals brainstorming alone). That is, brainstorming groups generate fewer unique ideas that are of lesser quality than nominal groups (Mullen, Johnson, and Salas, 1991; although see Kramer, Kuo, & Dailey, 1997). This result has been attributed to a number of factors, including greater evaluation apprehension in the groups, reduced motivation in the groups (see Section 2.3.1 below), production blocking (i.e., greater difficulty thinking and talking in the group context), and production matching (i.e., imitation of an apparent group standard of low productivity, the latter resulting from one or more of the previous processes) (see Oxley, Dzindolet, & Paulus, 1996; or Diehl & Stroebe, 1987, for overviews of prior work).

Recent work on brainstorming has tended to focus on certain moderating variables suggested by these theoretical explanations. For example, consistent with the production

matching hypothesis, Paulus and Dzindolet (1993) found that group performance could be significantly increased and even made equivalent to nominal groups when group members were given information regarding the performance standards of a typical nominal group. To reduce evaluation apprehension, Camacho and Paulus (1995) also found that forming a brainstorming group with only members who are low in social interaction anxiety can yield productivity rates equivalent to those of a nominal group. And Nijstad, Stroebe, and Lodewijckx (1999) have shown that the suboptimality of brainstorming groups declines with group size, an effect they empirically link to larger groups being more likely than smaller groups to persist at the task.

Another interesting recent line of research examines the impact of brainstorming group facilitators. Oxley et al. (1996) trained facilitators to counter a number of processes that might contribute to the usual process loss. For example, facilitators were instructed to: (1) keep the group members focused by interrupting politely when necessary; (2) prohibit comments unrelated to the task; (3) prohibit explanations of why ideas may be good or bad; (4) restate the problem or previous suggestions when the group pauses; (5) involve members who are not contributing by asking them direct questions about their opinion; and (6) remind members of the brainstorming rules whenever ideas are criticized. Oxley et al. (1996) varied the degree of training that was given to the facilitators. They report that brainstorming groups with highly trained facilitators (who had several hours of training and practice) were as productive as comparable nominal groups. When training was less extensive though (e.g., a single hour of training or simply reading through training instructions), no such benefit was observed. Interestingly, during the first 5 minutes, the nominal control group produced significantly more ideas than any of the other conditions. However, during the last 5 minutes (of a 20-minute session), it was the brainstorming group with the highly trained facilitator that was the most productive. Future research varying the length of brainstorming sessions, as well as alternating private and group idea generating periods (Paulus, 1998), may provide a more complete picture as to when brainstorming groups are as successful as or more successful than individuals brainstorming alone.

Given the limited circumstances, under which brainstorming groups may be “successful,” why do they remain so popular? One possible explanation is that individuals believe they can produce more ideas in groups than if they were alone, even when they have participated in suboptimal groups (Paulus, Dzindolet, Poletes, & Camacho, 1993). For example, interactive group members claim they would have produced fewer ideas and ideas of lesser quality if they had brainstormed alone, whereas individuals in nominal groups state that they would have produced more ideas and of higher quality had they brainstormed in a group setting (Paulus & Dzindolet, 1993). This illusion of group effectiveness may stem from self-serving (and, hence, gratifying) comparisons with other group members’ contributions (Paulus et al., 1993) or from group members taking credit for ideas that are not their own (and thereby overestimating their own productivity in the group context) (Stroebe, Diehl, & Abakoumkin, 1992).

2.2.3 Electronic brainstorming. Just as technology has created new forms of “mere presence,” it has also spurred the development of electronic alternatives to traditional, face-to-face brainstorming groups (e.g., see Dennis & Valacich, 1993; Gallupe, Cooper, Grise, & Bastianutti, 1994; and Valacich, Dennis, & Connolly, 1994). With such electronic

brainstorming, group members can enter their thoughts directly into a common computer database. As ideas are entered, they become available at the computer terminals of the other members of the group. Production losses due to evaluation apprehension are minimized by not indicating the identity of the author of each idea. Production blocking is avoided because users do not have to wait for others to finish typing before they enter an idea of their own and because they have the choice of whether or not to attend to the ideas of the other members. It is also possible that free riding may be minimized if the productivity of each group member is recorded on his or her own computer terminals (this question has not been addressed sufficiently, though).

The effectiveness of electronic brainstorming, compared to nominal and traditional brainstorming groups, seems to be moderated by group size. In a meta-analytic review of performance of electronic brainstorming groups, Boster and Butler (1999) found that nominal groups were more productive than electronic groups when the group size was less than or equal to seven (with the advantage of nominal groups increasing as group size decreased). However, when the group size was eight or more, electronic groups were more productive than nominal groups, with this advantage increasing with group size. Compared to traditional brainstorming groups, electronic groups produced more ideas, with the difference increasing as group size increased. There is some speculation but little hard evidence at present to explain this pattern of results. One possibility is *stimulation gain* (Boster & Butler, 1999). Ideas mentioned by any individual may stimulate the production of ideas by other group members. It seems likely that the magnitude of such stimulation would increase with group size. Another possibility is that perhaps members in brainstorming groups are stimulated to think of new and imaginative thoughts when presented with unusual ideas. Because rare and unusual ideas are more likely to be generated by larger groups, perhaps this phenomenon helps explain the decrease in production loss (although one examination of this *rarity stimulates* hypothesis by Connolly, Routhieaux, & Schneider, 1993, provided little support). Further research on the effects of group size in brainstorming groups seems warranted.

2.3 *Group motivation*

2.3.1 Group motivation losses. In the early 1990s, 20 years of research documenting and explaining a number of group motivation loss mechanisms culminated in comprehensive reviews and theoretical integrations of this literature. Using meta-analyses, Karau and Williams (1993) documented the robustness of such losses, and their moderation by several theoretically important variables (e.g., gender and culture). More importantly, they – and, in an independent piece, Sheppard (1993) – argued persuasively that most of these effects could be understood from the perspective of instrumentality-value models. For example, group conditions which either reduced the risk of expending low effort (e.g., in which group contributions were non-identifiable, cf. Williams, Harkins, & Latané, 1981) or reduced the instrumentality of high effort (e.g., in which the efforts of others made one's own contributions dispensable, cf. Kerr, 1983) should and do tend to be characterized by suboptimal group member motivation.

2.3.2 Group motivation gains. In the last few years, there has been growing evidence that certain group conditions can also lead group members to be *more* motivated than they would be under interesting non-group conditions (e.g., working individually or among independent coactors). Williams and Karau's (1991) work on *social compensation* was groundbreaking. In a series of experiments, Williams and Karau have compared pairs of coactors with cooperative dyads working at an idea-generation task (introduced by Harkins & Petty, 1982) which stressed quantity (not quality) of ideas. In their collective condition, the idea-generation task was additive and "information-reducing," that is, individual members' contributions could not be identified. Earlier work (e.g., Williams et al., 1981) has shown that the latter conditions can prompt social loafing. However, Williams and Karau added two features that distinguished their dyads from most prior social loafing settings. The first was the value group members placed on group success (or, in their terminology, how "meaningful" the task was). In their generic procedure, Williams and Karau told their participants that performance at the idea-generation task was highly correlated with intelligence. Hence, poor group performance at the idea-generation task would mark the group (and both its members) as low in intelligence, clearly a stigmatizing outcome. The second was the expectation of one's partner's performance. In the key conditions, participants expected rather poor performance from their partner, either because (a) the confederate-partner asserted low ability (Williams & Karau, 1991, Exp. 1; Karau & Williams, 1997, Exp. 2), (b) asserted the intention to exert little effort (Williams & Karau, 1991, Exp. 2), or (c) the subject was chronically mistrustful of others (Williams & Karau, 1991, Exp. 1). Under these conditions, the subject should both value group success highly and should see him/herself as indispensable for that group success. And, as their analysis predicted, Williams and Karau (1991; Karau & Williams, 1997) found higher levels of performance in their collective condition than in the corresponding (i.e., with the same expectations about coactor's performance) coactive condition. Moreover, as their instrumentality analysis suggested, reducing the value participants placed on group success (or, as they put it, the "meaningfulness" of the task) eliminated this social compensation motivation gain effect (Williams & Karau, 1991, Exp. 3). Thus, when group success is very highly valued and one has good reasons to believe that one's fellow group member(s) could or would not work very hard, one may increase one's efforts in order to compensate for the other(s).

In our own lab, we have recently extended this social compensation work (Swanson, Messé, & Kerr, 2000). The effect depends upon the expectation that other group members are incapable (i.e., low in ability and/or motivation). In our work, we have used the effect to probe for performance expectations of stigmatized others. In one study (Swanson, Messé, & Kerr, 2000, Exp. 1), the same confederate either walked into the lab or came in a wheelchair. Participants worked at one of two tasks: (a) A cognitive task (the same idea-generation task used by Williams & Karau); or (b) a physical task (paper folding). It is important to note that for neither task was being in the wheelchair a handicap (indeed, if anything, the strength required to handle a wheelchair should have enhanced ability at the physical task). Participants either worked cooperatively in a dyad with the confederate, worked next to the confederate in a coaction condition, or worked individually. For the physical task, cworking participants showed a social-compensation motivation gain (relative to either coactors or individuals) when their partner was physically

handicapped, but not when he was non-handicapped. Handicap status did not affect performance at the cognitive task, even though participants in both task-type conditions reported that they were not confident in their (handicapped) partner's cognitive ability. We conducted another experiment in which all participants performed the same simple task (vowel cancellation). For half the participants, however, it was alleged that performance hinged primarily on physical factors (e.g., hand-eye coordination); for the rest, it was alleged that performance hinged primarily on cognitive skills. In this experiment, we found social compensation with a handicapped partner for *both* task framings. Thus, we have found evidence that participants presume both a general physical and mental incapacity for those with serious (but task-irrelevant) physical handicaps, leading them to socially compensate for a handicapped partner.

Sustained research on group motivation losses was stimulated by the rediscovery of a long-ignored result – viz. Steiner's (1972) and Ingham, Levinger, Graves, & Peckham's (1974) rediscovery of Ringelman's (1913) early findings. Witte's (1989) rediscovery of Köhler's (1926, 1927) long-ignored findings could serve a similar function for the study of group motivation gains. In the studies of most direct interest to us, Köhler asked male rowing club members to perform a simple motor persistence task either as individuals or in dyads. In the individual condition, the rower held a bar connected to a 41 kg weight through a series of pulleys. His task was to do standing bicep curls for as long as possible, paced by a metronome with a 2-second interval. In the dyad condition, the weight was doubled (to 82 kg) and one member of the dyad gripped each side of the bar.

Re-analysis of Köhler's data (Hertel, Kerr, & Messé, 1999) shows that across all dyads there was a significant motivation gain. Köhler was also interested in the effects of group ability composition on group performance. In addition to the mean motivation gain, he also found that when there was either very little discrepancy in the abilities of the dyad members or a very large discrepancy, the dyads did worse than their average member, whereas for moderate levels of ability discrepancy, the dyads did better than the average member. Stroebe, Diehl, & Abakoumkin (1996) reported five attempts to replicate the Köhler effect. The first experiment used Köhler's original lifting task. It was successful in that dyads did better than their average (Köhler's inappropriate baseline) and their less capable member (the appropriate baseline) when there was a relatively large discrepancy in abilities. However, this study also confirmed a serious problem with the lifting task – it is altogether too taxing and too hazardous. Stroebe et al. reported that “Most of our subjects suffered from intense muscle pain after the first (individual) session and were rather unwilling to participate in the second (group) phase of the experiment” (Stroebe et al., 1996, p. 52, parenthetical comments added). Although substantial cash inducements prompted enough subjects to return to enable the investigators to conduct dyadic- versus individual-performance comparisons, Stroebe et al. recognized that Köhler's experimental task, acceptable to athletes in the 1920s, is probably not acceptable to student-subjects (or committees charged with protecting the welfare of human-subjects) in the 1990s, and that a different laboratory task would be required to study the Köhler effect.

Stroebe et al. did employ an alternative task in their next three experiments. In a variant of another of Köhler's original tasks, participants turned a crank (with a mechanical brake) as fast as possible for 10 minutes. On all trials, participants worked in separate rooms. To capture the conjunctive aspect of Köhler's task, participants were told that unless the

turning speeds of the two dyad members were sufficiently close to one another, a penalty would be assessed. A computer screen continuously displayed the discrepancy in turning speeds between dyad members on dyadic trials. Unfortunately, although there was some evidence of motivation gains at this task (dyads generally did better than isolated individuals), there was no evidence of moderation of this effect by the relative abilities of the dyad members. Stroebe et al. conceded that the Köhler effect had not been replicated with the crank-turning task, and attributed their findings to powerful effects of intra-group competition, overwhelming and masking the process(es) responsible for Köhler's results.

Finally, Stroebe et al. described an unpublished thesis by Ruess (1992). The subject's task was to sit in a chair, attach a 1 kg weight to one's arm, and then hold one's arm horizontally for as long as possible. The arm was held above a string, one meter above the floor, connected at each end to a stand. The end of a trial occurred when the arm was lowered and broke the string. In the dyad condition, two participants held their arms above a single string. Subjects participated in two sessions, one assessing individual performance and a second assessing performance in dyads, with order of the sessions counterbalanced. Hertel et al.'s (1999) re-analysis revealed that overall there was no net motivation gain.

In a recent paper (Hertel et al., 1999, Exp. 1), we successfully replicated Köhler's motivation gain using a modified version of Ruess's task which better avoided ceiling effects for individual performance and more nearly approximated Köhler's task demands, mutual performance feedback, and concern with group success. Participants performed the task both individually and in same-sex dyads. Analyses of dyad performance data revealed a significant ($p < .001$) overall motivation gain – on average, dyads performed 14.25 seconds longer than their weaker member performed individually (an increase of about 10% over the no-motivation-gain performance baseline). As in Ruess's (1992) study, we found (a) only a positive linear (and no non-linear) relationship between the discrepancy of dyad members' abilities and the group motivation gain, and (b) the magnitude of this association was just about what one would expect from regression-to-the-mean artifacts. The clear implication is that for our version of the Köhler task, working in the dyad did have a motivation-enhancing effect on the less capable member, but for the conditions that we investigated, motivation gain was constant across dyads with members that are equal, moderately unequal, or extremely unequal in ability (as indexed by individual performance).

In a subsequent study (Hertel et al., 1999, Exp. 2), we competitively tested an instrumentality-value explanation for the Köhler effect against a leading alternative explanation – Stroebe, Diehl, Abakoumkin, and Arnscheid's (1990) goal comparison explanation. Stroebe et al. suggested that when there is no clear standard of good performance, group members engage in social comparison of one another's level of performance to decide on reasonable performance goals. They go on to suggest that when task accomplishment is important or valued by group members, there will be an upward bias in this social comparison process, that is, those performing less well should set goals closer to the performance levels of the most capable group members. To competitively test these explanations, we compared the performance of dyads versus individual controls under both conjunctive and additive task demands (Steiner, 1972). All participants first per-

formed an individual trial and then a group trial under one of these two task demands. The conjunctive task version was very similar to the task requirements of the study described above; the trial was over when either one of the dyad members quit the task. In the additive task demand condition, a dyad trial was not over when one dyad member quit. The other dyad member could continue as long as possible, and thereby earn more points for the team. The results of the study were clear. There was a significant overall motivation gain (of 45.7 seconds, $p < .001$) in the conjunctive condition, but no significant gain in the additive condition. These results contradict the social comparison explanation, since the process of social comparison and upward goal setting ought to have occurred for additive as well as conjunctive conditions.

3 Social Dilemmas

3.1 *Definitions and background*

So far we have been discussing collaborative group performance contexts within which there is considerable mutuality of interest between the members – for example, group members share an interest in effective group performance. We now shift our attention somewhat to contexts within which there is greater conflict of interest among group members. Specifically, we will focus on social dilemmas, contexts where there is a clear conflict between personal and collective interest.

Social psychological interest in social dilemmas began in the early 1980s, with the publication of a pair of influential papers (Dawes, 1980; Messick & Brewer, 1983). In many ways, this represented a continuation and expansion of a longstanding interest in cooperation within the two-person prisoner's dilemma game (PDG) (see Pruitt & Kimmel, 1977, for a review), and a response to dissatisfactions with that older research tradition (e.g., some argued that PDG research had become paradigm bound; the two-person game failed to capture interesting features of many real-world cooperation problems; cf. van Lange, Liebrand, Messick, & Wilke, 1992).

Social dilemmas are defined by the following three properties:

- 1 Each group member has a behavioral choice (a dichotomous one in the simplest cases).
- 2 One response (or choices in one direction on a response dimension) always results in larger outcomes for the group member making the choice than the other (or opposite) choice, no matter what choices any other group members make. In the simple, dichotomous case, this personally more-rewarding choice is commonly termed the D choice (signifying a “defection” to self-interest).
- 3 However, the result (both individually and collectively) of universal defection is worse than the result of all group members making the opposite, personally irrational choice (typically termed the C, or cooperative, choice).

In essence, social dilemmas capture a conflict between personal and collective interest – defection is personally rewarding (and in that sense, “rational”), yet, if everyone makes

the same choice, cooperation would be more collectively rewarding. Note that the classic, two-person prisoner's dilemma (PD) game is just a special case of the more general social dilemma, or N -person PD (although there are a few potentially significant psychological differences between the typical two-person and N -person contexts, Orbell & Dawes, 1981). More importantly, social dilemmas appear to model a variety of important real-world situations, including problems of environmental protection, population growth, special interest economics, and the provision of public goods (cf. Baron et al., 1992).

In the last two decades, research attention on social dilemmas has grown steadily. Unlike the older PDG work, a number of distinct experimental paradigms have evolved (Komorita & Parks, 1995; Orbell & Dawes, 1981), including give-some games (where personal contributions to the group earn interest, but then have to be shared with all in the group), continuous and step-level public goods games (where a valued commodity is provided to all through group member contributions, and non-contributors may be able to free ride on others' contributions), and common resource dilemmas (where group members may withdraw a valued commodity from a shared pool, but risk overharvesting and destroying the commons). And, because social dilemmas arise in so many social contexts, scholars from many social, economic, behavioral, and biological sciences have joined in the research effort. This growing, interdisciplinary interest has been reflected in standard indicators of research activity – increasing publications (e.g., the *PsychInfo* database indicates none before 1980; over 50 by 1990; and nearly 150 today), literature reviews (e.g., Komorita & Parks, 1994, 1995), regular conferences (e.g., an international conference series meeting biennially since 1984), and a number of edited volumes devoted specifically to the topic (e.g., Foddy, Smithson, Schneider, & Hogg, 1999; Liebrand & Messick, 1996; Liebrand, Messick, & Wilke, 1992; Schroeder, 1995; Wilke, Messick, & Rutte, 1986).

At the most recent social dilemma conference, Messick (1999) suggested that as interest in social dilemmas has grown, so has it diversified. Two strong new trends, he argued, are increased applied social dilemma research and simulation studies. Below we will describe some of the recent work which illustrates these new trends, as well as providing a selective update (i.e., since the comprehensive reviews provided by Komorita & Parks, 1994, 1995) on a number of more established research topics. Let's begin with the latter.

3.2 *Recent progress on old questions*

3.2.1 Framing. The different experimental models of social dilemmas have distinctive features. For example, many common resource tasks not only pose the social conflict of personal versus collective interest which is the essence of a social dilemma, but a temporal conflict, between short- and long-term interests (Messick & McClelland, 1983). Such differences ought to deter us from presuming that effects observed with one paradigm will invariably be replicated with all other paradigms. The most recent social dilemma reviews by Komorita and Parks (1994, 1995) have even used the most common research paradigms as the basis for subdividing and organizing their presentations. Those reviews, however, seem to us to be marked more by the consistency of key findings across paradigms; paradigm-specific effects seem to be the rare exception rather than the rule.

However, one type of contrast has clearly been worth making – the way in which functionally equivalent games are presented or framed. Older research has reported reliable (although not entirely consistent, see Schwartz-Shea & Simmons, 1995) framing effects (e.g., Brewer & Kramer, 1986). The most common contrast has been between having group members give something to the group (as in give-some games or public-goods tasks) versus taking an equivalent amount from the group (as in common resource dilemmas). When reliable effects have emerged, they have tended to indicate greater cooperativeness in the latter, “take” framing, although there are many failures to find such an effect (see de Dreu & McCusker, 1997, for a review).

Some recent work has found the effect (e.g., Kerr, 1999b, Exp. 1; Sell & Son, 1997). Other recent work has extended it in interesting directions. For example, van Dijk and Wilke (1997) have suggested that taking something that belongs to a group may be perceived as *doing bad*, whereas not contributing the same amount to a group is perceived as *not doing good*. Baron (e.g., 1996) has shown that *doing harm* is widely seen as a greater moral fault than *not doing good*. Consistent with this logic, van Dijk and Wilke (1997) found that whether what one could take belonged to the group or to oneself mattered in a resource dilemma framing (viz. participants were more cooperative in the former case), but it didn't matter when the game had a public-good (i.e., taking) framing. Similarly, Kerr and Kaufman-Gilliland (1997) found that framing a public-good problem in terms of the harm done by a D choice led to greater cooperation on a subsequent game than framing the same problem in terms of the helpfulness of a C choice. In a similar vein, de Dreu and McCusker (1997) present evidence consistent with prospect theory's prediction that losses loom larger than equivalent gains, and showing that those with more pro-social orientations (who put relatively greater weight on collective outcomes) cooperate more when the game is framed in terms of losses, whereas less pro-social respondents (who put relatively greater weight on own outcomes) cooperate more when the game is framed in terms of gains.

Most experimental social dilemmas give their group members identical or symmetric positions in the game – they have the same opportunities to contribute, to enjoy the public good, to harvest from the shared resource pool. Some research (see Kerr, 1992, for a review) has examined behavior in the more ecologically valid asymmetric case. Van Dijk and Wilke (1995) noticed an interesting difference in this literature between the effects of asymmetry in dilemmas with a “give” frame (public good) and those with a “take” frame (resource dilemma). Group members appeared to more closely follow an equity rule in public-goods tasks (e.g., those who had more money should contribute more to the public good), but to follow an equality-of-final-outcome rule in resource dilemmas (e.g., those with greater access to the pool ought not to take much more than those with less access). They theorized that the different task framings made different features salient. In public good tasks, the focus is on what group members contribute, and an equity norm would prescribe that those with more to contribute or who stand to profit more from the public good ought to contribute more to its provision. In resource dilemma tasks, the focus is on what group members harvest, and since there are typically no differences between experimental participants in deservingness, both an equity and equality norm prescribe equal harvests. Van Dijk and Wilke (1995) confirmed this model in direct experimental tests.

Although the generic gain versus loss contrast has continued to dominate this area of research, interesting new framing contrasts have also begun to be explored. For example, Larrick and Blount (1997) compared the ultimatum game (Player 1 makes a division of resources which Player 2 either accepts or rejects; in the latter case, neither player receives anything) to an equivalent sequential resource dilemma game (Player 1 makes a harvest, then Player 2 makes a harvest; if the total harvests are larger than the pool, neither player receives anything). They find that the choice of accepting/rejecting (as in the ultimatum game) led to greater claims by Player 1 and less willingness to accept unfavorable allocations by Player 2 than the choice of making a claim (as in the resource dilemma game).

3.2.2 Group discussion. Probably the most robust finding in the social dilemma literature (regardless of experimental paradigm) is that allowing group members to first discuss the dilemma substantially increases the rate of cooperation in the group (cf. Komorita & Parks, 1995; Sally, 1995). A number of explanations had been proposed; however, until fairly recently “. . . relatively little research has been conducted that compares these various propositions . . .” (Parks & Sanna, 1999, p. 110). In the last half-dozen years, though, evidence has been steadily mounting for one explanation – that group members (explicitly or implicitly) make commitments or promises to cooperate during group discussion and subsequently tend to honor these commitments. Kerr and Kaufman-Gilliland (1994) showed that the effect of discussion was not moderated by the efficacy of one’s cooperative act, a finding consistent with the commitment explanation (“if I promised to cooperate, I should do so, even if my cooperation turns out to have little impact”) but inconsistent with the leading alternative explanation (i.e., that discussion increased concern for fellow-members’ welfare, which should, in turn, make the degree to which a cooperative act could actually affect others’ welfare a strong moderating variable). Moreover, content analyses of group discussions confirmed that explicit promises to cooperate were associated with subsequent cooperation (cf. Orbell, Dawes, & van de Kragt, 1988). Both this and a follow-up study (Kerr, Garst, Lewandowski, & Harris, 1997) indicated that the effect of discussion was not moderated by whether one’s choice was made publicly, suggesting that the operative promising norm was an internalized one (i.e., participants felt personally bound to keep their commitments, even if others could not tell whether they had done so). Similarly, Chen and Komorita (1994) found that binding pledges to cooperate were followed by greater cooperation (cf. Chen, 1996, for more on the effects of requiring pledges of group members). Bouas and Komorita (1996) found that group discussion which revealed a consensus to cooperate in the dilemma enhanced subsequent cooperative behavior. And, although group discussion of an important but irrelevant issue enhanced group members’ feelings of identification with their group, it did not increase cooperation (cf. Dawes, McTavish, & Shaklee, 1977), contrary to the concern-with-others’-fate explanation.

Whether group commitment/promising is a sufficient explanation for the powerful effects of discussion remains to be shown (cf. Chen, 1996), as do the dynamics of such promising (e.g., what binds and releases one from such promises? How does the mode of interpersonal communication affect commitments and cooperation? Kiesler, Sproull, & Waters, 1996, Rocco & Warglein, 1995; what other factors moderate the effects of discussion? Webb & Wheeler, 1998).

3.2.3 Game strategy: Reciprocity. A longstanding question in the prisoner's/social dilemma literatures is "how should one play the game to encourage others to be cooperative (particularly in repeated or iterated games)?" A variety of methods (e.g., manipulating the strategy of one's partner; computer tournaments pitting alternative strategies against one another, e.g., Axelrod, 1984) converge on suggesting that the simplest strategies (viz. always cooperate or always defect) are not very effective; the latter prompts retaliation and the former prompts exploitation. Rather, more complex strategies seem to be more effective, and the most promising such strategy is Rapoport's tit-for-tat (TFT) strategy, which prescribes that one begin by cooperating, and thereafter imitate the other's latest choice (Axelrod, 1984; Patchen, 1987).

Over the last decade, Komorita, Parks, and their colleagues have undertaken an impressive program of research on the use of reciprocal strategies (like TFT) in social dilemmas (see Komorita & Parks, 1999, for a detailed review). Their early work (Komorita, Hilty, & Parks, 1991) focused on the operation of reciprocal strategies in two-person groups (for which TFT was initially developed), and suggested a number of interesting results – for example, strategies with delays of reciprocating cooperative choices were less effective in prompting cooperation than strategies with similar delays in reciprocating defecting choices; the initial cooperative choice of TFT ("niceness") may actually reduce the strategy's effectiveness; it may not be the ease of understanding TFT ("clarity") which underlies its effectiveness. Subsequent work has focused on the more interesting case of groups larger than dyads, where one's strategy may be hard to detect (and exert influence) embedded as it usually is in the combined behavior of many other group members. That work has shown that the larger the proportion of group members who use a TFT strategy, the greater the overall level of cooperation (Komorita, Parks, & Hulbert, 1992), that a "tough" reciprocal strategy (i.e., one which only reciprocates cooperation when a majority of others cooperate) is more effective than a "soft" strategy (which reciprocates cooperation even if only a few others cooperate), and that none of their reciprocal strategies was very effective when the temptation to defect was high (i.e., one stood to gain a great deal by making the defecting choice) (Komorita, Chan, & Parks, 1993).

3.2.4 The efficacy of cooperative choices. An obvious deterrent to cooperation in large-group social dilemmas is the perception that one's cooperative act has very little impact – that is, that the efficacy of a cooperative choice is low (Olson, 1965). For example, a single fisherman in a large fishing community may rightly reason that limiting his own catch will have very little impact on the long-term viability of the fishing grounds (although it will have a substantial impact on his own, short-term profit). The dilemma arises, of course, from the accumulated effect of many such "imperceptible" acts of defection.

Bandura's groundbreaking research (e.g., Bandura, 1986) has demonstrated the importance of a sense of efficacy for initiating a wide range of behavior. In light of such findings, it is not surprising that the perceived efficacy or criticality of a cooperative choice has been shown to affect cooperative behavior in a number of early (Kerr, 1992; Rapoport, Bornstein, & Erev, 1989; van de Kragt, Orbell, & Dawes, 1983) and more recent (Au, Chen, & Komorita, 1998; Chen, Au, & Komorita, 1996) social dilemma studies.

My colleagues and I (see Kerr, 1996, for a review) have extended such findings in two directions. The first has been to use manipulations of the efficacy of cooperation as an analytic device, to better understand other effects of interest. One example was noted earlier – the fact that the effects of discussion are not moderated by manipulations of C's efficacy confirms a commitment/promising explanation of the effect of group discussion (Kerr & Kaufman-Gilliland, 1994). In another study (Kerr & Harris, 1996), we found that in the absence of group discussion, efficacy did moderate the effect of players' social motives or orientations (see section 3.2.6 below), consistent with the notion that those with pro-social orientations attach relatively greater weight to others' outcomes. However, *with* group discussion, efficacy did *not* moderate the effect of social motives. We argued that when cooperating was morally sanctioned (as it would be if group members had committed themselves to cooperate), pro-social individuals cooperated not to maximize others' or joint outcomes, but rather out of a greater concern of "doing the right thing." The latter result is nicely consistent with other work (e.g., Liebrand, Jansen, Rijken, & Suhre, 1986; Sattler & Kerr, 1991; van Lange & Kuhlman, 1994) showing that pro-social individuals are more likely than those with anti-social motives to see choice in a social dilemma as having moral implications.

The second thrust of our efficacy research has been to explore what aspects of a dilemma affect one's perception of the efficacy of cooperation (e.g., Kaufman & Kerr, 1993). Unsurprisingly and (in most instances) rationally, the bigger the group facing a social dilemma, the less efficacious we perceive our choice to be (Kerr, 1989; Rapoport, 1988). However, we also seem to overgeneralize this generally valid inference, and use large group size as an indicator of personal and collective inefficacy, even in instances in which it actually is not (Kerr, 1989). Our most recent work has likewise found further evidence for such "illusions of inefficacy." For example, if we are strongly tempted to defect, we tend to rationalize our unwillingness to cooperate by concluding that a cooperative act is particularly unlikely to matter to the group (Kerr & Kaufman-Gilliland, 1997). Or, if our group has succeeded in avoiding the "tragedy" of mutual defection in the past, we are both more likely cooperate and to see our group as collectively efficacious, able to solve such dilemmas in the future, even when that early success was due more to facing an easy dilemma (e.g., a public-good provision with a low provision point) than to a particularly cooperative set of group members (Allison & Kerr, 1994).

3.2.5 Environmental uncertainty. In most laboratory social dilemmas, there is no uncertainty about the "rules of the game." However, in many (if not most) real-world social dilemmas, there is considerable uncertainty about the dilemma. For example, even experts may not be certain just how much overfishing a particular fishing grounds can handle before the resource is damaged beyond recovery. A program of research by Rapoport, Suleiman, Budescu, and their colleagues over the last decade has been exploring the effects of such environmental uncertainty (see Suleiman & Budescu, 1999, for a review). The paradigm used in their studies is quite simple. A group of n persons must make harvest decisions from a shared resource pool. If the sum of their harvests, r , is greater than X , the size of the pool, no one gets anything; if $r \leq X$, each person just gets what she/he requested. What makes the task difficult (and interesting) is that the group members usually don't know exactly how large the pool is. They only know that the pool

size could be some value (with uniform probability) between a lower and upper limit, α and β respectively (e.g., α could be 0 and β could be 1000 points; in their paradigm, m = the midpoint of this range, and hence, the expected value of the pool size, is always 500). When uncertainty is minimal ($\beta - \alpha = 0$, $m = 500$), most group members do the obvious thing – they take an equal share of the known pool. The more interesting and very consistent finding (see Suleiman & Budescu, 1999) is that as uncertainty increases (i.e., as $\beta - \alpha$ increases), the mean individual harvest also increases. Consequently, the chances of avoiding the “tragedy of the commons” (i.e., here, not exceeding the pool size) decline with such environmental uncertainty. These findings have been obtained for both in the usual, simultaneous-choice paradigm, and a variety of sequential paradigms (e.g., knowing only one’s sequential position; knowing both one’s position and the amount previously harvested).

More recent research has been devoted to explaining the effect of environmental uncertainty on harvesting in this paradigm. Rapoport and colleagues have shown that equilibrium solutions to the problem make just this qualitative prediction, suggesting that participants might have some insight into the (rather complex) predictions of game theory. Further support for this possibility has come from analyses showing consistency with certain nonintuitive predictions of the game theory predictions (e.g., that the relation between uncertainty and harvest size is not linear but rather has a “kink”; that the variance of harvest sizes is a constant multiple of β ; e.g. Budescu, Rapoport, & Suleiman, 1995). However, it turns out that these qualitative patterns can also be predicted from much simpler explanatory models (Budescu, Rapoport, & Suleiman, 1992). And, some recent research (Gärling, Gustafsson, & Biel, 1999; Gustafsson, 1999; Gustafsson, Biel, & Gärling, in press) suggests that the key result may be the result of an individual rather than a social process – viz. an optimism bias. As uncertainty increases, we may tend to overestimate the probability of preferred possibilities relative to unpreferred possibilities.

Another issue for recent research is exploring whether environmental uncertainty has the same simple negative effect on cooperation within other experimental paradigms. The effect has been observed in paradigms minimally different than Rapoport’s (e.g., Hine & Gifford, 1996), but a number of studies now suggest that the effect of environmental uncertainty (broadly defined) is moderated by a number of factors, including social value orientations (Roch & Samuelson, 1997), level of social uncertainty (i.e., uncertainty about others’ behavior; Wit & Wilke, 1998), the type of dilemma, the type of environmental uncertainty, and whether and what type of asymmetry exists in group members’ access to shared resources (van Dijk, Wilke, H., Wilke, M., & Metman, 1999). Clearly, the effects of environmental uncertainty seem to be more complex than was apparent in the pioneering Rapoport paradigm.

3.2.6 Individual differences. As in every other behavioral domain, there are stable individual differences in willingness to cooperate in social dilemmas. Primary research attention has been given to how different social values or orientations (e.g., Messick & McClintock, 1968) relate to both perception and behavior in social dilemmas. The most recent addition to this large and interesting literature is van Lange and Semin-Goossens’ (1998) research on reactions to a cooperative partner. They find that those with pro-social orientations (who value joint benefit) will reciprocate a partner’s cooperation regardless

of the partner's ostensive degree of honesty or intelligence. Pro-socials seem uninclined to look for reasons to mistrust or discount another's cooperative overtures (e.g., "he's just setting me up," "she's too dumb to play the game well [that is, competitively]"). Those with pro-self orientations (who value either own benefit or getting more than the other), on the other hand, do generally seem to mistrust or discount others' cooperation and tend to exploit another's cooperative choices (e.g., Kuhlman & Marshello, 1975). However, van Lange and Semin-Goossens show that if pro-selfs can first be persuaded that the other is very honest, they too will reciprocate that other's cooperation.

Another individual difference that has been receiving increasing attention is depersonalized trust. This trait can be conceptually and empirically (cf. Parks, 1994) distinguished from social orientations, but like them, seems to affect the way the dilemma and a partner's behavior is perceived and reacted to. For example, Parks and Hulbert (1995) show that the uncooperativeness of low trusters is triggered by fear of exploitation – when there was little risk of such exploitation, trust was unrelated to cooperation rates. High versus low trusters also interpret other players' stated intentions differently. High trusters will respond cooperatively to a partner's assertion of cooperative intent and ignore/discount assertions of competitive intent; low trusters, however, ignore/discount assertions of cooperative intent but decrease cooperation in response to assertions of competitive intent (Parks, Menager, & Scamahorn, 1996). However, if such assertions are accompanied by sufficiently long periods of unconditional behavior (e.g., the partner follows "I plan to cooperate" with repeated cooperative choices), the "blind spots" of both high and low trusters can be overcome (e.g., even low trusters will reciprocate the other's cooperative intent/behavior).

Another interesting trend in this area is research showing that the effect of individual difference variables depends upon features of the dilemma. So, for example, the effects of social orientations depend upon how the dilemma is framed (de Dreu & McCusker, 1997), the effects of player sex depend upon what kind of resources are available (Sell, Griffith, & Wilson, 1993), and the effects of player individualism/collectivism depend upon whether or not there is intergroup conflict involved in the social dilemma (Probst, Carnevale, & Triandis, 1999).

3.2.7 Culture. Although there have been a few cross-cultural comparisons of social dilemma behavior, most early work involved contrasts of rather similar cultures (e.g., Liebrand & van Run, 1985). More recently, contrasts between more individualistic and collectivist cultures have begun to be made (e.g., Parks & Vu, 1994). Most interesting in this regard is the theoretical and empirical work of Yamagishi and his colleagues (e.g., Yamagishi & Yamagishi, 1994; Yamagishi, Cook, & Watabe, 1998) contrasting Japanese and American cultures. Yamagishi shows that Americans are generally more trusting than Japanese. He attributes this difference to a historical emphasis in Japanese culture and commerce on insuring one's welfare by entering into close relationships (e.g., between the worker and organization) which mutually obligate its members (e.g., the workers are obligated to work hard, not to strike, etc.; the organization is obligated to insure job security). He suggests that the emphasis in American and other Western cultures has been to work outside such safe but closed relationships and to trust more in the cooperative intent of others, especially those with good reputations.

3.2.8 Mood. It is commonly assumed that more positive moods are associated with more cooperative, pro-social behavior, and there is some prior research consistent with this conclusion (Knapp & Clark, 1991). On the other hand, there are also a number of failures to find this effect (see Hertel, 1999, for a review). Hertel, Neuhof, Theuer, and Kerr (in press) have recently suggested that the effects of mood might be constructively analyzed using models which hold that mood affects one's mode of information processing (e.g., Schwarz & Clore, 1996). Specifically, these models suggest that one is more likely to rely on simple, heuristic processing when in a positive mood, but more likely to rely on careful, systematic processing when one is in a negative mood. To test this idea, Hertel et al. varied their subjects' moods (positive vs. negative) in an experimental chicken dilemma. This dilemma is a close cousin of the social dilemma. It is named after the dangerous game of "chicken" in which two cars drive toward each other to see which (if either) will "chicken out" first. In the chicken dilemma, a systematic, rational analysis of the game prescribes that one ought to do the opposite of what the other does – if the other won't chicken out, you must (or die); if the other does chicken out, one gains status (at least in certain adolescent circles) by not doing so. However, it is a very common heuristic to simply imitate what others do. In a series of three experiments, Hertel et al. showed that players in a chicken dilemma were relatively more likely to heuristically imitate their partner's behavior when they were in a good mood, but relatively more likely to systematically (and rationally) do the opposite of their partner when they were in a bad mood.

3.3 Mechanisms of behavioral control in social dilemmas

It has long been suggested (e.g., Messick & Brewer, 1983) that one way to solve the conflict inherent in social dilemmas is to provide additional rewards for cooperation and/or punishments for defection. Economists would likely call this "adding side payments." So, for example, rather than allowing people to consume as much water as they like during a drought, those who use large amounts might be compelled to pay higher costs or fines. Yamagishi (1986) has noted that such incentives can both be tangible (as the fines in the preceding example) or intangible (e.g., social disapproval). A number of early studies (Bell, Petersen, & Hautaluoma, 1989; Yamagishi, 1986) demonstrated that such social reward/punishment mechanisms can encourage cooperation. More recent work has begun to elaborate when and why such systems are effective.

3.3.1 Anonymity. One common assumption is that such systems should lose their power when cooperative choice is anonymous – if the rewarding/punishing agent cannot tell whether one has cooperated, she/he cannot contingently reward/punish for that behavior. Although a number of early studies seemed to observe such an effect, more recent studies have not (see Kerr, 1999b, for a review). Kerr (1999b) has attributed such null findings to the absence of certain necessary conditions in many studies. In particular, Kerr suggested that in order for such sanctions to be effective, several conditions beyond non-anonymity of response must be simultaneously met – viz. there must be high awareness of the sanctioning contingency, a clear belief that the sanction will be

delivered, and the sanction itself must be substantial. However, these hypotheses have not yet been tested.

3.3.2 Leadership. One “structural solution” to social dilemmas explored by Messick and his colleagues (see Samuelson & Messick, 1995b) is to replace – or to allow the group members themselves to replace – the system of free choice or access to the commons with alternative allocation rules. The alternative rule studied most extensively has been to give a single group member (or leader) the authority to make all group members’ choices. Samuelson and Messick (1995a, 1995b) have presented a conceptual model which integrates the findings of their extensive program of research. Their model suggests that group members pass sequentially through a series of choice points before they opt for a new allocation system. First, they must see the present system as failing. Naturally, expectations about what outcomes would be successful or satisfactory will bear on this choice. Second, before considering alternative allocation rules, members will make attributions for current difficulties. Certain attributions (e.g., certain group members don’t understand the dilemma) may suggest non-structural solutions (education or persuasion); other attributions (e.g., low replenishment rates) may recommend structural change, such as a new allocation method. Finally, members must determine whether alternatives are likely to be superior to the status quo on several dimensions, including efficiency, fairness, self-interest, and freedom of action. For example, giving broad power to a leader may help deal with some immediate resource dilemma, but may invite abuse (loss of freedom) if there are no checks on that leader’s authority. This might be why selecting a leader appears to be less popular than several other possible structural changes (e.g., making harvests a group decision; dividing the sustainable yield equally among group members; cf. Rutte & Wilke, 1985).

There is also mounting evidence that the way in which the power or authority of leaders is exercised determines the effectiveness of that leadership. Applying Tyler’s (e.g., 1990) group-value theory, Tyler and Degoey (1995) have shown that willingness of community members to support an authority’s call for restraint in use of a scarce, shared resource is strongly related to the perceived fairness of the authority’s decision-making procedures. Specifically, citizens were more willing to conserve water during a drought when they had positive relations with the leaders who were urging such conservation. This relationship was not moderated by how severe the scarcity was perceived to be or by whether leaders were making decisions that were favorable to the citizens. Van Vugt and de Cremer (1999) have extended these findings, showing that the strength of identification with the community or group is also important. For example, a general preference for a leader whose power was legitimate (e.g., democratically elected) was stronger when identification was high. And, a greater effectiveness of a punitive leader (vs. one who strives for positive group relations) was eliminated if identification with the group was high. Finally, some recent findings by Kerr (1999a) are also consistent with the group-value analysis. Kerr found that the effectiveness of a threat of exclusion from the group for deterring defection was moderated by how efficacious one’s cooperative choice was. When efficacy was ostensibly equal across group members, such threats were very effective, but when one had greater efficacy than the average other, they were actually counterproductive. Kerr suggested that threats of exclusion might well have been viewed as unfair or excessive under the latter conditions,

for any of several possible reasons (e.g., greater normative uncertainty; resentment at being coerced to do what one would ordinarily do voluntarily). Such findings suggest that just as institutional solutions to social dilemmas must be carefully designed (Ostrom, 1990), so must mechanisms of informal social control.

3.3.3 Who one plays with or for. In most social dilemma studies, one is interdependent with one or more others and has a very limited set of choices – typically to a dichotomous (or, sometimes, continuous) cooperation/defect response. But a number of recent investigations (many of them employing computer simulation, see section 3.5 below) have begun to explore the implications of interesting and realistic alternative patterns of play – choosing one’s partner, choosing the level of interdependence one has with one’s partner(s), cooperating and thereby benefiting only certain others in the group, or choosing simply not to play at all.

One of the first such studies demonstrated that collective (and hence, mean group member’s) welfare was enhanced by allowing group members to choose whether or not to play a PD game with other group members (Orbell & Dawes, 1993). This result was traced to a greater willingness to risk (and subsequently profit) from interdependence by those with more cooperative intent and expectations. Those who are more competitive appear to avoid interdependence – a wise choice in social dilemmas. Boone and Macy (1999) have extended this question to situations with repeated play. They find that players who are “defensive” (i.e., who want to cooperate but will avoid a competitive partner) are more cooperative overall when they have an exit option, whereas “aggressive” players (i.e., who want to exploit their partners if they can avoid retaliation by exiting) are less cooperative with an exit option.

Other studies have explored restricting one’s interdependence to only certain other group members. For example, Yamagishi and Cook (1993) find that dilemmas in which one’s cooperative choice only affects certain other individuals (which they call *network-generalized* exchange systems) prompt greater cooperation than when such choices benefit everyone in the group (or *group-generalized* exchange systems). An interesting twist on this idea is the work of Batson and his colleagues (Batson, Batson, Todd, & Brummett, 1995; Batson, Ahmad, Yin, Bedell, Johnson, Templin, & Whiteside, 1999). They demonstrate (Batson et al., 1995) that concern for a single other (e.g., one’s child, one’s spouse) – prompted perhaps by a particularly close, empathic relationship with that person – can lead to selfless sacrifice to that other, but low contributions to the group as a whole, and hence, low collective outcomes in generic social dilemmas. Moreover, this kind of focused, empathy-induced altruism seems to operate whether or not one’s choices are publicly known (see section 3.3.1 above).

Still other research has begun to explore the effectiveness of alternative mechanisms of social control. For example, Blount-White (1994) examined the effect of giving group members a buy-out option, where group members could offer an uncooperative member money in exchange for their rights to harvest. Unfortunately, this option didn’t prove to be very effective. There is somewhat more encouraging evidence for the effectiveness of an ostracism or social-exclusion option. In a pair of studies, Kerr (1999a, 1999b) has found that the threat of social exclusion from the group (and future interaction and interdependence) can deter defection. However, the effectiveness of such threats seems to depend on other factors, such as the efficacy of cooperation (cf. section 3.3.2 above).

3.4 *Applied social dilemma research*

Interest in social dilemmas within social psychology has been sustained by the clear potential of such research for application (Kerr, 1990). In the last few years, this potential is beginning to be realized. Among the applied social dilemmas that scholars have begun to analyze and solve are the problem of supplying enough organ transplants (Hessing, 1992), the problem of meeting water shortages through voluntary restraint on consumption (Tyler & Degoey, 1995; van Vugt, 1999), the problem of supplying sufficient day-care services (Eek, 1999), and the problem of relying upon formal or legal environmental standards to solve environmental dilemmas (Tenbrunsel, Wade-Benzoni, Messick, & Bazerman, 1997) (see van Vugt, Snyder, Tyler, & Biel, in press, for other illustrations). A particularly impressive program of applied social dilemma research has been carried out by van Lange, van Vugt, and their colleagues on problems of public transportation. They have shown, for example, that drivers who fail to take advantage of environmentally friendly transportation options (e.g., a commuter lane) tend to rationalize those choices (e.g., to increase the importance they attach to the flexibility of solo driving and to decrease the importance they attach to the low cost of carpooling; van Vugt, van Lange, Meertens, & Joireman, 1996). A number of these studies have extended basic research on social orientations to applied transportation dilemmas (e.g., van Vugt, van Lange, & Meertens, 1996). Commuters with more self-focused orientations (competitors or individualists) tend to analyze these dilemmas in terms of personal costs and benefits – for example, how efficient would car travel be for me (van Lange, van Vugt, Meertens, & Ruiter, 1998) or how convenient a privatized railway system would be for me (van Vugt, 1997). Further, drivers' trust in other drivers' cooperative intent interacts with the drivers' own social orientation; pro-social drivers who are also trusting are more positive toward collective transportation solutions (e.g., carpooling or using public transportation) than any other social orientation/trust combination (van Lange, van Vugt, & Meertens, 1998). Further, social orientations can alter the way a driver conceives of and reacts to others' behavior in transportation dilemmas. Pro-social drivers tended to see commuting as an environmental problem with the structure of a social dilemma, and, as much social dilemma research has shown, to only be willing to cooperate (e.g., take public transportation) when others will also cooperate. On the other hand, pro-self drivers tended to see commuting as an accessibility problem (e.g., if too many others are on the road, it's so slow on the highway that I'm compelled to use public transportation), which, like a chicken dilemma, leads them to not imitate other commuters' choices, but do the opposite (e.g., to respond to others' cooperative use of public transportation by driving, exploiting the now uncrowded highways).

3.5 *Simulations of social dilemmas*

The other noteworthy innovation in recent (say, the last half decade of) social dilemma research is widespread utilization of computational modeling and computer simulations. Given the special difficulties of direct empirical study of collective phenomena, particu-

larly in very large groups (cf. Davis & Kerr, 1986), there is much to recommend this approach.

Some of this work has been used to extend and complement empirical programs of research. For example, earlier we described the program of research on reciprocation in social dilemmas by Komorita, Parks, and their colleagues (see section 3.2.3). Parks and Komorita (1997) have also systematically explored the effectiveness of reciprocal strategies varying in their degree of “toughness” using computer simulations of large (viz. 100-person) groups. They have shown the superiority of a GBRS (a “group-based reciprocation strategy” which requires a certain fraction of the rest of the group to cooperate before reciprocating cooperation) to a number of alternative strategies. They have also shown that the optimal fraction for reciprocating cooperation varies directly with the temptation to defect (i.e., one ought to require a higher level of cooperation among others before reciprocating if the dilemma payoffs make defection more attractive). (However, there are also indications that these conclusions may apply more to factions uniformly following such reciprocal strategies than to individual group members doing so (de Heus, in press).)

Other simulations have employed “neighborhood” models which tie social processes to particular locations in a social “space” (the dynamic social impact model of social influence illustrates this generic approach; Nowak, Szamrej, & Latané, 1990). Messick and Liebrand (1995) for example, have developed models of social dilemma behavior in which individuals judge the success of their interactions with others by comparing their own outcomes with the outcomes of their near neighbors. They have shown that (and how) the sustainable level of cooperation then depends upon how that comparison is made, the value of payoffs for cooperating and defecting, and what rule or heuristic the group members apply to react to others’ choices. They subsequently extended these findings (Messick & Liebrand, 1997) by showing that some common predictions about the effects of one of these factors (viz. the costs and benefits of cooperation) were incorrect when tested within their dynamic models. Using a similar geographic model, in which dyadic interaction becomes increasingly unlikely as players are more distant from one another, Watanabe and Yamagishi (1999) explored the consequences of permitting players to move. In particular, players were allowed to move toward neighbors who cooperated and move away from neighbors who did not cooperate. In addition, strategies that succeeded in accumulating resources produced clones whereas strategies that failed to do so died out. In such a society, the only one of many plausible strategies to survive for long was tit-for-tat. The movement capability led to “colonies” of TFT players forming which avoided players using other strategies.

Earlier (see section 3.3.3) we noted that a number of investigators have begun to explore the consequences of relaxing the “forced choice” paradigm common in most experimental social dilemma work – that is, permitting group members to restructure their group (e.g., to exit groups, to expel uncooperative members, to opt for lower levels of interdependence). Paralleling this empirical work have been a number of simulations employing such permeable group boundaries. Hayashi and Yamagishi (1998), for example, show that when selective play is allowed, an “out-for-tat” (OFT) strategy, in which one abandons a partner who defects, outperforms other strategies with which it competed in a simulation tournament (like Axelrod’s (1984) tournament for the two-person PD game). However, if there are opportunity costs available (e.g., even better options than sticking with one generally

cooperative partner), a variation on the OFT strategy – one biased on a certain degree of trust in the benevolence or at least cooperativeness of strangers which could tempt one to abandon a good relationship for one even better – results in even better outcomes than OFT. Similarly, Takagi (1996) has shown that in a society facing a social dilemma (viz. an N -person give-some game) in which successful strategies replace unsuccessful ones, uncooperative strategies tend to replace both unconditional cooperation (unsurprisingly), but also certain forms of conditional cooperation. For example, a strategy that says, “only cooperate with cooperative others” is displaced by competitive strategies. However, one conditionally cooperative strategy did prove superior – one which prescribed cooperating only with those who cooperate with other cooperative people. In essence, identify those who only cooperate within group boundaries, and then cooperate only with them (excluding and refusing to cooperate with those who cooperate outside the group boundaries). In follow-up work, Tagaki (1999) explored a more complex dilemma – one in which every person simultaneously faced both a continuous give-some dilemma and a public-good provision task. This more complex dilemma is consistently “solved” (i.e., not dominated by players with uncooperative strategies) only when there are some players with very strong ingroup biases – they only cooperate with others whose cooperation (on both problems) is restricted to fellow cooperators. Such research provides a strong support for the functional value group boundaries that compel cooperation with all within those boundaries, but lack of cooperation with all outside those boundaries.

4 Afterword

In this chapter we have identified a number of recent advances in the study of performance and cooperation in groups. Although much interesting research on groups is currently being done in sister disciplines (such as organizational behavior and experimental economics; cf. Levine & Moreland, 1990), the study of group performance within social psychology is still very much a going concern at the beginning of the 21st century. Although many of the questions about group behavior that were posed by our discipline’s founders remain unanswered, genuine progress has been and is being made on them all. Moreover, the discipline has posed many new, fascinating questions about the way we conventionally work and cooperate together. With the advent of novel technologies for collaborative communication and interdependence (cf. Hollingshead, this volume, chapter 23; McGrath & Hollingshead, 1994; Sproull & Kiesler, 1991), this new century is sure to bring still other new and unconventional – but no less fascinating – questions.

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CHAPTER SIX

Poker Face, Smiley Face, and Rant 'n' Rave: Myths and Realities about Emotion in Negotiation

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There is a mix of advice concerning the role of emotion in negotiation. Both the prescriptive and descriptive negotiation literatures toil with the questions of whether it is advisable to be emotional in a negotiation, whether a negotiator should play on the opponent's emotions, and whether it is better to display positive or negative emotions throughout a negotiation. Our review of the research literature identifies three distinct perspectives on the role of emotion at the bargaining table. These perspectives, which we label the rational negotiator, the positive negotiator, and the irrational negotiator, give rise to very different prescriptive advice. First, we review these three perspectives on emotion and critically examine the prescriptive advice that flows from each of these perspectives. Subsequently, we expose the assumptions and biases that underlie this advice. Finally, we suggest directions for future research.

Three Perspectives on Emotion in Negotiations

The rational negotiator

According to this perspective, the negotiator is best advised to neither feel nor express emotion at the bargaining table, as emotion is a weakness. Emotion is a signal that one has departed from rational analysis and is vulnerable to losing one's power or share of the bargaining zone. According to the economic model of negotiations, a rational actor – unburdened by emotions – is considered to be in a better position at the negotiation

table. There are few, if any, empirical investigations that explicitly test this assumption, as it arises primarily as an extension of normative bargaining axioms (Nash, 1950; Raiffa, 1982).

The view that emotion is a weakness, or the “Mr. Spock” perspective (Thompson, Nadler, & Kim, 1999) gives rise to the common expression (with which professional students are bombarded), “keep a poker face.” Indeed popular literature derived from rational bargaining theory warns negotiators from being easily goaded into emotional bursts of anger, for example; being manipulated so you are “apt to be tricked into an unfavorable settlement because of your emotional state” (Nierenberg, 1968, p. 46). Despite the appeal of the rational model, keeping a cool head is, of course, easier said than done – emotions seem to have a life of their own, beyond the control of the rational actor. “It is important for disputants to recognize that emotions can overwhelm logic. In fact, people are sometimes trapped into acting against their own best interests, even when they recognize that they are doing so” (Susskind & Cruikshank, 1987, p. 89). However, there is little empirical evidence to support the assertion that emotion, felt or expressed, is a weakness. The most direct support comes from the risk literature, which clearly advises negotiators to adopt a risk-neutral attitude; risk seeking or risk aversion can lead to suboptimal decision making and negotiated outcomes (Bazerman & Neale, 1982). Indeed, departures from risk neutrality are associated with less-than-desirable bargaining outcomes (see Neale & Bazerman, 1991; Thompson, 1998 for reviews).

The positive negotiator

A quite different view about negotiation emerges from the social psychological literature on negotiation. Social psychologists argue that expression of positive emotion, in contrast to a poker face, can be an advantage at the negotiation table. In a number of empirical investigations, positive emotion enhanced the quality of negotiated agreements, as compared to the outcomes reached by “neutral” (poker-faced) negotiators. The advantages of positive emotion derive from a theory of information processing, which argues that people process information differently when in a positive mood as opposed to a negative or a neutral mood (Isen, 1987). In what has become the seminal study in positive affect and negotiation, Carnevale and Isen (1986) induced positive emotion in some negotiators by instructing them to perform a seemingly unrelated task of sorting cartoons into two piles – those that were very funny, and those that were not as funny. Negotiators in the manipulated conditions were also told they could keep the scratch pad they used during the experiment as a gift; negotiators in a control condition did not see the cartoons, nor were they given a gift. Negotiators in the positive affect condition reported more positive moods and subsequently created more mutually beneficial bargaining outcomes than the control group. Carnevale and Isen (1986) concluded that, “the use of positive affect may be a very useful tactic that may help negotiators discover optimal solutions . . . The ability to integrate, to find creative ways of combining issues, and to develop novel solutions may be necessary for negotiators to achieve anything beyond obvious compromises” (p. 12).

In a complementary fashion, empirical studies support the intuition that negative emotion has a detrimental impact on negotiation. For example, in one empirical investigation, people participating in a job contract negotiation achieved lower joint gains when they experienced high levels of anger and low levels of compassion toward each other than when they experienced positive emotion toward each other (Allred et al. 1996). In addition, angry negotiators were less willing to work with each other in the future. Other studies suggest that angry negotiators are more likely to overtly retaliate (Allred, 1996), endangering the negotiation process.

Other investigations that have measured and manipulated emotion report similar findings (for reviews, see Allred, Mallozzi, Matsui, & Raia, 1996; Barry & Oliver, 1996; Forgas, 1998; Thompson, Nadler, & Kim, 1999). Negotiators in a good mood generally realize higher individual and joint gains on both integrative and distributive negotiation tasks than do people who are in a neutral or negative mood (Kramer, Pommerenke, & Newton, 1993; Kumar, 1997). Specifically, negotiators in positive moods plan to use more cooperative strategies, engage in more information exchange, propose more alternatives, and are less likely to engage in contentious tactics (Carnevale & Isen, 1986). According to this perspective, positive affect promotes creative thinking (Isen, Daubman, & Nowicki, 1987), which, in turn, makes negotiators more likely to engage in innovative problem solving (Carnevale & Isen, 1986). This is particularly advantageous in integrative tasks where innovative thinking helps negotiators overcome the faulty fixed-pie perception (Thompson & Hastie, 1990) and achieve better joint outcomes (Carnevale & Isen, 1986).

The affect infusion model (AIM) (Forgas, 1995) supports the view that positive emotions enhance negotiators' effectiveness. However, the underlying psychological process is different than that proposed by the creative information-processing account. The AIM model posits that people's moods influence their cognitive evaluations. Essentially, the AIM model suggests that negotiators adopt mood-congruent bargaining strategies; according to this theory, happy negotiators will develop more cooperative tactics than unhappy negotiators (Forgas & Moylan, 1996).

The positive emotion view of negotiation strictly cautions negotiators against the perils that befall negotiators who express negative emotion. Perhaps the most well-developed theory in this regard is Gresham's law of conflict, which basically states that conflict can either take a constructive or destructive course and that the negotiator's own actions determine which course is more likely (Deutsch, 1973). Deutsch (1973) views emotions as attitudes and proposes that "a cooperative process leads to a trusting, friendly attitude and it increases the willingness to respond helpfully to the other's needs and requests" (p. 30). In contrast, a "competitive process leads to a suspicious, hostile attitude, and it increases the readiness to exploit the other's needs and respond negatively to the other's requests" (p. 30). This destructive course is often described as a *conflict spiral*. The dynamics of escalation are difficult to defuse because the emotions of negotiators tend to rise exponentially. "It appears that we humans are good at escalating confrontations, but we are ill-equipped to promote de-escalation. . . . Like small boats on a rising river, it is easy for disputing parties to lose control of the circumstances" (Susskind & Cruikshank, 1987, p. 93).

The irrational negotiator

A quite different perspective argues that negotiators who show blatant negative emotion (e.g., anger, rage, indignation, impatience) can be extremely effective at the bargaining table. We label this perspective the irrational negotiator because the stance that these negotiators take at the bargaining table appears to be extreme, risky, reckless, and seemingly out of control. A constellation of theoretical treatments give rise to the “irrationality” approach; most notable are the views expressed by Thomas Schelling (1960) and Robert Frank (1988). We will ultimately argue, as do these theorists, that the “irrational” negotiator is, in fact, highly rational. Yet, on a strictly behavioral level, in terms of emotional expression, this person *appears* irrational and unreasonable. Irrational negotiators are effective because their irrational behavior convinces the other party that they would be willing to take great risks that would hurt both parties if they do not get what they want. Irrational negotiators use wild displays of negative emotion to persuade the other party to meet their demands. By appearing unstable and irrational, the irrational negotiator convinces his opponent that he would sooner walk away from the table without having reached an agreement than settle for anything less than he desires.

The irrational negotiator is effective to the extent that he can convince the other party that he will follow through with what seems to be an extreme course of action – perhaps because he has nothing to lose. Grave examples of such tactics can be found throughout history, as well as in the game theory literature. For example, before the German annexation of Austria, Hitler met to negotiate with the Austrian Chancellor von Schuschnigg. At some point in this dark historical meeting, Hitler’s mode of influence escalated to extreme coercive power: It “became more strident, more shrill. Hitler ranted like a maniac, waved his hands with excitement. At times he must have seemed completely out of control . . . Hitler may then have made his most extreme coercive threats seem credible . . . [He threatened to take von Schuschnigg into custody, an act unheard of in the context of diplomacy]. He insisted that von Schuschnigg sign an agreement to accept every one of his demands, or he would immediately order a march into Austria” (Raven, 1990, p. 515).

Game theorists stress that irrational behavior must be convincing to be effective. Schelling (1960) gives the example of two negotiators playing a game of “chicken” in their cars – a highly risky game. One person assumes an advantage if she rips the steering wheel out of her car and throws it out the window, as long as her opponent sees her doing this. The other party is then forced into being the one who moves out of the way; in other words, she is forced to concede, if both are to survive the game. But not just any behavior will suffice in order to evoke such concessions from the other party; in his book *Passions within Reason*, Frank (1988) argues that “for a signal between adversaries to be credible, it must be costly (or, more generally, difficult) to fake” (p. 99). Frightened that the negotiation may end in an impasse, the other party may be pressured to concede to what would normally be considered outrageous demands. This type of negotiation strategy is best characterized by the expression “the squeaky wheel gets the grease,” and can be highly effective. The negotiator who rants and raves is likely to get a large portion of the pie. The irrational negotiator is thus, synonymous to what we call the rant ‘n’ rave approach.

A close cousin of the irrational negotiator is the manipulative negotiator – the negotiator who controls emotion to his or her advantage. This approach is more popularly known as Machiavellianism. Similarly, Aristotle argued that “anyone can become angry – that is easy. But to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way – this is not easy.” The actor who is so keenly in control of his emotions that the way in which they are displayed can be so precisely manipulated uses emotions in a highly rational way. However, little empirical evidence has tested this assumption.

Review of Three Models of Emotion in Negotiation and Prescriptive Implications

In this section, we critically examine the prescriptive advice that stems from each of the above perspectives. Some of this advice seems to be little more than common sense, whereas other advice is more counter-intuitive. As we will see, most of the prescriptive maxims derived from these approaches lack direct empirical support short of armchair observation, but many maxims have nevertheless attained the status of conventional wisdom. However, taken together, the prescriptive advice regarding the role of emotion in negotiation is often contradictory and confusing. In our discussion of these views, we pay special attention to the *type* of bargaining situation that is used to model negotiator behavior. To anticipate one of our conclusions, we argue that fundamentally different bargaining situations (i.e., fixed sum vs. variable sum and cooperative vs. non-cooperative) largely influence which strategy is most effective. Stated simply, in highly competitive bargaining situations, poker face or “irrational” strategies may indeed be effective; in contrast, in mixed-motive situations, particularly those in which parties’ interests are not common knowledge, positive affect is often an advantage.

The rational negotiator approach

Probably the largest body of prescriptive research and theory on negotiation exalts the negotiator as a rational actor (Nash, 1950; Raiffa, 1982). As a rational actor, the negotiator is expected to follow the axioms of normative bargaining theory. Within these axioms, there is little room for the expression of emotion. For example, in his book, *The Art and Science of Negotiation*, Raiffa (1982) lists “self control, especially of emotions and their visibility” as the thirteenth most important characteristic (out of 34 key characteristics) of highly effective negotiators (p. 120). Similarly, Nierenberg (1968) claims that “. . . people in an emotional state do not want to think, and they are particularly susceptible to the power of suggestion from a clever opponent . . . [an] excitable person is putty in the hands of a calm, even-tempered negotiator . . .” (p. 46). A common prescriptive maxim that emerges from the rational negotiator approach involves the “poker face” philosophy.

According to the rational negotiator approach, the negotiator is strictly advised to keep a poker face. Even though a negotiator may feel emotion, he or she dare not express it, lest it leads to less than desirable outcomes. According to economists, the negotiator who expresses relief, satisfaction, and approval risks settling for a worse outcome than does the poker face negotiator. For example, Raiffa (1982) strictly cautions negotiators from displaying emotion “. . . don't gloat about how well you have done . . .” (p. 130). Janis and Mann's (1977) model of decision making formalizes the injurious impact of emotion on decision-making quality. Specifically, they argue that decision-makers experiencing high levels of emotional stress often undergo incomplete search, appraisal, and contingency planning thought processes. As a result, they make defective decisions.

Although there may be benefits to “keeping a poker face,” such rational behavior may not always be in a negotiator's best interest. The very act of trying to keep a poker face may have adverse effects, especially if this requires high levels of monitoring and control. When we tell ourselves not to conjure certain thoughts, we find that it is virtually impossible to refrain from thinking the exact thoughts that we did not wish to enter our minds. There can be a paradoxical effect of attempting to control thoughts and emotions. For example, when people are instructed to not think about white bears, they immediately gain a vivid image of white bears. This well-documented process of ironic monitoring (Wegner & Wenzlaff, 1996) which keeps people from successfully monitoring their cognitions, may also prevent negotiators from adequately monitoring their emotions. The more people try to block out unwanted emotions or mental states, the more accessible these very emotions may become. Indeed, people who spend more time trying to repair their negative moods are most likely to suffer from persistent emotional problems such as depression and anxiety (Wegner & Wenzlaff, 1996).

The self-monitoring effects of controlling emotion may also interfere with the mutual process of entrainment, whereby one person's internal process is captured and modified by another person – such as when one person in a positive mood “affects” the mood of the other person with whom she is interacting (Kelly, 1988; see also this volume, chapter 7). Entrainment refers to the observation that when people interact, each person synchronizes her behavior in accordance with the behavioral and emotional states of the other person. In time, people develop an interpersonal rhythm that reflects a shared emotional and behavioral state. Entrainment is a natural biological process that is conducive to social relations (Kelly, 1988). The negotiator who is deliberately focused on repressing emotion may interfere with this process and prevent negotiators from developing a naturally synchronized pattern of interacting. Specifically, the negotiator who deliberately adopts the “poker face” strategy may contribute to a more stilted and awkward interaction. Indeed, the creation of dyadic rapport facilitates the attainment of more mutually beneficial outcomes (Drolet & Morris, 1998; Moore, Kurtzberg, Thompson, & Morris, 1998).

Similarly, emotions can be contagious (Hatfield, Cacioppo, & Rapson, 1992). If one negotiator conveys positive emotion, the other negotiator is likely to “catch” this positive emotional state and convey positive emotion as well. Positive emotion promotes cooperative and integrative negotiating strategies (Forgas & Moylan, 1996), and facilitates, which in turn helps avoid impasse (Drolet & Morris, 1998; Moore et al. 1998; Thompson & Kim, in press). Positive emotions thus facilitate the negotiation process.

The concerns with the “poker face” advice are not meant to imply that we should never attempt to monitor our emotions; rather, they suggest that when it comes to a “poker face,” the nature of the parties’ interdependence is a critical issue, as well as the timing of the negotiation. According to Kelley (1979), people in a negotiation may be cooperatively or competitively interdependent. Walton and McKersie (1965) make the same point in their theory of bargaining. Namely, in some bargaining situations, people have perfectly opposing interests; in other bargaining situations, people’s interests are not perfectly opposed, and in fact may be compatible – we call this mixed-motive interdependence. The “poker face” strategy would seem to be most advantageous when parties’ interests are perfectly, negatively opposed – that is, there is no advantage to parties becoming mutually entrained. In contrast, in mixed-motive situations there is potential for integrative agreement, and in these instances, it would make sense for parties to attempt to build rapport with the other party, through displays of (genuine) positive emotion. Indeed, when parties’ interests are purely opposed, negotiators display counter-contagion, taking pleasure when the opponent loses; when negotiators’ interests are aligned, they show more sympathetic emotional contagion. In addition, timing may be key. At the beginning of a negotiation, “schmoozing” and conveying positive emotion can help build rapport and are conducive to more integrative outcomes (Moore et al. 1998). On the other hand, at other points of the negotiation, masking our true feelings could be beneficial. For example, conveying elation at the end of a negotiation makes our opponent feel less successful and less satisfied with the negotiation (Thompson, Valley, & Kramer, 1995).

In summary, the “poker face” strategy may be useful in situations of competitive interdependence. The logic of the rational, poker face negotiator is one that pertains most directly to situations in which negotiators’ interests are directly opposed, such that a gain or an advantage for one party comes at the direct loss of the other party. In such situations, negotiators compete directly with one another – a situation known as distributive bargaining. Because every negotiation situation involves a distributive element, even mixed-motive negotiations (Lax & Sebenius, 1986), this is an argument for rationality. This assertion is true normatively; however, behaviorally, a more common road that negotiators take to reach settlement is to build rapport, and building rapport necessitates positive emotion (Moore et al., 1998).

The positive emotion approach

The positive emotion approach takes a completely different perspective on the role of emotion at the bargaining table. There are three critical processes in this regard: One involves *feeling* positive emotion; another involves *expressing* positive emotion; a third involves *engendering* positive emotion in the opponent. A constellation of social psychological mechanisms are involved in this approach, and quite frankly, the exact causal determinants surrounding the effectiveness of positive emotion have yet to be clearly identified. Our review of the literature reveals two psychological mechanisms that may underlie the powerful positive emotion effect. One relates to balance principles and the other to information processing.

One psychological mechanism that may underlie positive emotions relates to basic principles of balance and congruence, dating back to Heider (1958) and Newcomb (1961). At the bargaining table the negotiator reasons something like the following: If I like the other party and I am interacting with him/her, then I should expect a favorable outcome. Similarly: If I do not like the other party and I am interacting with him/her, then I should expect a negative outcome. Quite often, negotiations break down because negotiators assume the worst about each other and take offense even when none was intended. Negotiators form either positive or negative impressions of the other party early on in a negotiation. The balance principle suggests that parties at the bargaining table will interpret the opponent's statements and behaviors in a positive light if they like each other. Furthermore, it is parties' expectations that guide negotiators' subsequent behaviors, and according to Deutsch (1973), determine whether the negotiation takes a productive or destructive course. The balance principle is also consistent with the notion of entrainment. If two negotiators feel positively toward each other, they are likely to develop positive rapport that facilitates the mutually beneficial attainment of settlement.

A quite different theoretical perspective is related to positive emotion and information processing (Forgas, 1998; Isen, 1987). According to this theoretical perspective, effective negotiation requires creative information processing and it is positive, rather than negative emotion, that instigates such cognitive processing. Specifically, the instantiation of positive affect is associated with more creative and varied cognitions – precisely those that can facilitate integrative bargaining (Forgas, 1998; Isen, 1987). Corroborating evidence from examinations of positive affect on creative ability suggests that when people are experiencing a positive mood, they are more creative (Baron, 1990; Isen et al. 1987). One explanation for this is that positive emotions can affect cognitive processes such that people are better at integrating information and more flexible in conveying their thoughts (Isen et al., 1987; Isen, Niedenthal, & Cantor, 1992). For example, in one investigation, people experiencing positive affect were more likely to see relationships among ideas and to link non-typical category exemplars together (Isen et al., 1992). In negotiations, an increase in cognitive complexity and creativity can lead to higher joint gains (Carnevale & Isen, 1986). In contrast, some research suggests that positive mood can induce more heuristic, as opposed to thoughtful information processing. Under certain circumstances, one's own positive mood may reduce the motivation to systematically process message content (Bohner, Crow, Erb, & Schwarz, 1992; Schwarz & Bless, 1991), and the perception of a positive mood in another may prompt the use of heuristics in impression formation (Ottati, Terkildsen, & Hubbard, 1997). Although this would seem to lead to worse, rather than more effective negotiation performance, we believe that the heuristic processing instigated by positive moods differs from the cognitive biases revealed in the negotiation literature.

A number of prescriptive maxims derive from the positive emotion approach to negotiation. A common maxim deriving from this perspective is, "Do not sour the negotiation with an extreme opening offer." The common lore is that an extreme opening offer will anger the other party and cause him or her to retaliate with an extreme offer in return. An opening offer, in the case of two negotiators who do not know each other well, represents the first impression that they have of one another. In the long run, it is feared

that feelings of anger arising from an extreme opening offer can cause the opponent to be less cooperative, strongly increasing the probability of an impasse. A variety of research suggests that negative information learned early on about a person can have a powerful effect on impression formation (Asch, 1946).

In fact, there is some evidence that extreme offers may actually be strategically advantageous (Siegel & Fouraker, 1960; Thompson, 1995). Thompson (1995) found that negotiators with higher aspirations tended to place greater demands on their opponents, and ultimately realized greater payoffs. Thus in contrast to intuition, extreme opening offers may result in more profitable outcomes for the negotiator who makes them. Thus, the widely held assumption that one should not sour the negotiation with an extreme opening offer is flanked by two opposing theoretical assumptions and bodies of research. Research that supports the maxim indicates that uncooperative and hostile negotiators realize fewer joint gains than cooperative negotiators. Research that challenges the maxim suggests that the anchor provided by an extreme offer can actually help the party who makes the initial offer obtain a greater ultimate profit.

A second prescriptive maxim deriving from the positive emotion in negotiation view is the advice to “leave the other party feeling good.” This popular belief is based on the notion that engendering positive feelings in the other party benefits future negotiations. The assumption is that if an opponent leaves the negotiation feeling good about the process and the outcome, that person will be likely to engage in a cooperative fashion in subsequent negotiations and to fulfill the terms of the current contract. In addition, the way an opponent feels about the negotiation at its completion has implications for our reputation. An opponent who feels good about a negotiation may speak highly of us, thus enhancing our reputation. Thus, assuming that these positive feelings endure, we can build a positive reputation and enjoy success in our future negotiations. On the other hand, we may assume that an opponent who leaves the negotiation with negative feelings will be unlikely to want to cooperate with us in subsequent interactions. If our opponent has a negative experience with us, we may also fear gaining a reputation for being uncooperative.

One reason why negotiators may want to end the negotiation on a positive note is that people tend to place a great deal of emphasis on the end point of an event and on the event’s peak moment in determining their overall evaluation of the event itself (Fredrickson & Kahneman, 1993; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993; Redelmeier & Kahneman, 1996). The maxim “leave your opponent feeling good” resonates with this idea that the end point has a large impact on the overall evaluation of an experience. This suggests that even if an opponent felt as though she were pressured to make concessions during a negotiation, she could remember the negotiation favorably if the last few minutes of the interaction were experienced positively. For example, when opponents end the negotiation on a humorous note (e.g., “I will throw in my pet frog”) acceptance rates are higher than when they do not (O’Quin & Aronoff, 1981).

Whereas we may want to leave our *opponents* feeling good at the conclusion of a negotiation, we do not want to show our opponent that *we* feel good. Thompson et al. (1995) found that independent of the actual outcome, negotiators felt less satisfied (and presumably less positive) with the negotiation when they believed their opponents were happy with the final outcome. This research also indicates that negotiators who told their

opponent they felt good at the end of a negotiation ended up getting fewer dollars from their opponent in a subsequent allocation decision. This suggests that one should always avoid gloating at the end of a negotiation, regardless of how pleased one may be with the outcome. In fact, it may be wise to end a negotiation by pretending to be unhappy, thus causing the opponent to feel guilty and indebted.

A third perspective, which derives from the positive emotion view, is that hostility is detrimental to negotiation. The assumption is that hostility in a negotiation may breed further hostility that will spiral out of control. "Once an attack–defense cycle gets going the parties queue up to get their thrust in. The faster the attacks, and their replies, the higher the emotional tension. People in an emotional state make threats, not necessarily intending to carry them out, but threats provoke counter-threats and the parties may end up in a mutual exchange of sanctions because they boxed themselves into corners from which a retreat would [seemingly] cost too much . . . The consequence is that parties get nowhere except further apart which is the antithesis of negotiating" (Kennedy, Benson, & McMillan, 1980, pp. 42–43). The conflict spiral derives from Gresham's law. Such destructive conflict tends to escalate and expand, often irrespective of the initial cause, due to competition, misperception, and commitment processes (Deutsch, 1973).

The conflict spiral, or interchange of mounting negative affect, leading to irrational behavior is a cornerstone principle of dyadic communication. Individuals organize the continuous flow of interaction into discrete causal chunks (Swann, Pelham, & Roberts, 1987; Whorf, 1956). When engaged in conflict, people interpret these sequences of communication differently. Each party parses, or "punctuates" the conflict situation differently (Kahn & Kramer, 1990). That is, each party sees their own negative behavior as a defensive reaction to the unprovoked negative behavior of the other side; and simultaneously perceives the other party as an aggressor. Indeed, negative conflict spirals have been cited as a cause of war and continuing conflict between nations (Deutsch, 1973).

Even in the absence of outside provocation, processes internal to conflict cause it to escalate and persist over time. Once a conflict is underway, changes occur in the relationship between the conflicting groups. Negotiations often collapse when one party becomes angry with the other and desires to hurt the other party, rather than satisfy itself (Bazerman & Neale, 1983). The conflict spiral may further be fueled by the fact that negative emotions may be contagious (Hatfield et al., 1992).

Does the conflict spiral stemming from hostility imply that negotiators should avoid displaying hostile attitudes and behavior altogether? Not necessarily. In some cases, expressing hostility may actually facilitate the negotiation by allowing parties to "vent" or express emotion. "Particularly in interpersonal disputes, hostility may diminish significantly if the aggrieved party vents her anger, resentment, and frustration in front of the blamed party, and the blamed party acknowledges the validity of such emotions or, going one step further, offers an apology. With hostility reduced, resolving the dispute on the basis of interests becomes easier" (Ury, Brett, & Goldberg, 1988, pp. 6–7).

The benefits of positive emotion have been empirically examined nearly exclusively in the context of mixed-motive or integrative bargaining situations. In mixed-motive negotiations, parties must *cooperate* with one another to maximize the size of the pie and reach

mutual settlement, yet *compete* with each other so as to gain as much as they can for themselves. This is a challenging goal because negotiators do not have complete information about the other party's interests and so it is not obvious how the most joint gains can be attained. The pie can be enlarged in a number of ways, such as by trading issues on which parties preferences and priorities differ, adding new compatible issues, or capitalizing on differences in beliefs (see Thompson, 1998 for an overview). As indicated above, negotiators who are in a positive mood reach more mutually beneficial settlements than do those in neutral (or negative) moods. However, an obvious, but as yet, unanswered question concerns the impact of emotion on the distributive (or competitive) component. Generally, experimental studies have not examined this issue and therefore, our conclusions are that when both negotiators are in a positive mood, greater joint gains will be attained than when negotiators are in a negative, or neutral, mood; but it is unclear whether the positive emotion negotiator will gain significantly less of the total joint gain if paired with a negative or neutral opponent.

The "rant 'n' rave" approach

The irrational negotiator perspective, or "rant 'n' rave" approach, asserts that the expression of extreme negative – to the point of irrational – behavior can be highly effective. To the extent that a negotiator can convince the other party that he or she is just crazy enough to take outrageous risks, he or she can actually achieve a bargaining advantage (Schelling, 1960). A negotiator who is faced with an irate opponent may capitulate to the other party to end the interaction quickly (Frank, 1988). Although little or no empirical research has examined this strategy, there are four psychological explanations that may account for its effectiveness: perceptual contrast, negative reinforcement, self-regulation theory, and somewhat paradoxically, game theory.

The door-in-the-face technique (Cann, Sherman, & Elkes, 1975; Cialdini, 1975), most commonly investigated in the persuasion contexts, highlights the usefulness of perceptual contrast. The basic premise is that to the extent that a person makes what is perceived to be an outlandish, ridiculous request, he or she is more likely to secure agreement to a subsequent, smaller request. The fundamental principle involved is that of perceptual contrast (Cialdini, 1993). Quite simply, when we compare two different requests, one extreme and the other more modest, we perceive the second request to be much more reasonable than if we were to consider only the second request without having heard the first one. In the same way, perceptual contrast explains why, if we lift a heavy object, set it down, and then lift a light object, we perceive the light object to be much lighter than it actually is. Skilled negotiators have been profiting from perceptual contrast effects for years (Cialdini, 1993). Consider the savvy car salesperson who shows the potential buyer the most expensive models before showing her the model in which she is actually interested. Compared to the \$40,000 price tag of the expensive model, the \$20,000 price tag of the intended sale seems much more palatable. Thus, the negotiator who is aware of perceptual contrast effects can use them to her advantage. By making an outrageous initial request, one can increase the possibility that the second request will be accepted by one's opponent.

A second psychological explanation for the rant 'n' rave approach relates to basic principles of negative reinforcement (Skinner, 1938). Negative reinforcement, or escape behavior, explains the increased likelihood of behavior that eliminates or removes an aversive stimulus. If the radio is playing obnoxious music, the listener will turn it off, thus eliminating the unpleasant stimuli. In a similar vein, because most people find it unpleasant to be around hostile, negative, and demanding people, they may be willing to give the person what he or she wants just to make the other person be quiet. Ironically, this behavior operates as a positive reinforcement to the person displaying negative behavior. Conceding to an opponent's bursts of irrationality means rewarding their hostile behavior, and increases the likelihood of this behavior in the future. Thus, "squeaky wheel" negotiators may capitalize upon and be reinforced for their hostile behavior.

Similarly self-regulation theory (Baumeister, Leith, Muraven, & Bratslavsky, 1998) explains why people may give in to a hostile opponent. This theory proposes that most people like to prolong positive moods and exposure to positive stimuli and minimize negative moods. People self-regulate by actively working to maintain a desired positive mood; one way to achieve this is to avoid negative stimuli. Being around a "ranting and raving" negotiator is usually unpleasant, so much so that the negotiator will want to remove him or herself from the situation, which often means capitulating.

Paradoxically, game theory also helps understand a number of prescriptive maxims that derive from the irrational negotiator perspective. Probably the most well known is the *squeaky wheel principle* (Singelis, 1998). The squeaky wheel principle states that a negotiator should demonstrate an unwillingness to move away from a stated position, by escalating the level of hostility and using threats. Whereas little or no empirical research has examined the efficacy of this strategy, Schelling (1960) and Frank (1988) provide qualitative evidence that this strategy can be remarkably effective.

For example, a threat that compels rather than deters often takes the form of administering the punishment until the other acts, rather than if he acts. Schelling (1960) describes a situation with two people in a row boat. If one threatens the other that if he doesn't row the former will tip the boat over, that would not be as powerful as starting to rock the boat fervently while yelling at the other to row if he wants him to stop rocking. Thus, "initiating steady pain, even if the threatener shares the pain, may make sense as a threat, especially if the threatener can initiate it irreversibly so that only the other's compliance can relieve the pain they both share" (Schelling, 1960, p. 196).

Frank (1988) in his book, *Passions within Reason*, develops the idea that being motivated by emotion can be a competitive advantage, as long as one can stand up to the commitment made during an emotional outburst. An emotional negotiator is more likely to be able to make a credible threat of walking away from an offer she perceives as unfair, even if that offer would entail an objective gain for herself. This may allow the emotional negotiator to procure a better offer from her opponent, thus capturing a larger share of the bargaining zone.

A second maxim to be derived from this strategy is what we call the *tough strategy*, which involves signaling toughness throughout the negotiation so that the opponent will respect your position. Negotiators who make fewer concessions and make smaller concessions are indeed more effective in terms of maximizing individual gain compared to those who make larger and more frequent concessions (Siegel & Fouraker, 1960; Yukl, 1974).

The rant 'n' rave strategy has been modeled (but not empirically examined) primarily in the context of non-cooperative bargaining situations – situations in which each party makes a unilateral choice, not knowing at the time what the opponent will do, but knowing what the full range of outcomes will be. Thus, this bargaining situation differs significantly from the integrative bargaining situation used in the positive emotion literature, which nearly exclusively focuses on behavior in cooperative bargaining situations – that is, situations in which parties must mutually agree for any settlement to be binding. Another significant difference between the typical rant 'n' rave context and that of positive emotion has to do with how much information the parties have regarding what the possible outcomes might be. The positive emotion research has focused on situations in which negotiators have incomplete information about the other's interests and thus, the two of them need to cooperate in large measure so as to jointly determine the range of possibilities. In contrast, the irrational negotiator approach has been primarily studied in situations where the opponents have the same information; situations that have binary cooperate or deflect choices, such as the prisoners' dilemma or chicken game.

There are several ways in which signaling toughness can impede a negotiation. Whenever we try to convey an emotional position like toughness we run the risk that our opponent will either fail to receive our intended message, or will grossly misinterpret it. A staunch position can easily be misinterpreted as coercion or hostility rather than the respect and deference the tough party hopes to convey. This type of misinterpretation sets the stage for a conflict spiral (Rothbart & Hallmark, 1988) which is likely to lead to an impasse.

As a case in point, consider what happened during World War II (Rothbart & Hallmark, 1988). Shortly after the United States joined the allied forces in World War II, the Americans and British engaged in costly bombing raids over Germany aimed at decreasing the Germans' "will to resist." Although the allies would have expected to respond to the German's hostility by initiating a counter-attack, they expected that the Germans would respond to their displays of aggression by retreating in fear and intimidation. Participants on both sides predicted that they would retaliate against their opponent's coercive tactics while their opponents would retreat in response to their displays of aggression. In addition, negotiators often signal toughness by adopting a Boulwarism strategy (Walton & McKersie, 1965), wherein they make their position known and propose a first and final offer. Boulwarism is not very effective (Raiffa, 1982) and can instigate a conflict spiral (Thompson, 1998). Whereas signaling toughness may engender the respect of your opponent, it may also quickly escalate conflict and make reaching a settlement virtually impossible.

Misperceptions about Emotions in Negotiation

The most common prescriptive maxims regarding emotion that guide the behavior of negotiators at the bargaining table are hardly consistent and, in some cases, downright contradictory. The prescriptive literature advises negotiators to be simultaneously rational, positive, and irrational. We undertake an examination of psychology of emotions in negotiations to disentangle the conflicting aspects of the above strategies. This requires a

careful analysis of how people perceive emotions. Most important, it requires an analysis of how emotions are often misperceived. Specifically, three misperceptions about emotions in negotiations permeate much of the prescriptive advice offered to negotiators in all three of the perspectives we have reviewed. These three common misperceptions are that: (1) people can accurately understand and read emotions in others; (2) emotional states endure over time; and (3) emotion predicts behavior. We argue that these misperceptions affect negotiators' ability to effectively negotiate, in terms of maximizing both joint gain and individual gain.

Misperception 1: People can accurately understand and read emotions in others

Much prescriptive advice assumes that people have near-perfect insight into the emotions of others. Consider, the "keep a poker face" maxim. The maxim assumes that if a negotiator were to display any emotion, the other party would be able to accurately state and correctly interpret its meaning, thus conferring him with information about the opponent's position. In other words, the "keep a poker face" maxim presupposes that negotiators can accurately detect emotion in others.

People have limited access even to their own emotions (Loewenstein & Schkade, 1997), let alone to the emotions of those around them, and they often mispredict why others feel the way they do (Ekman, 1985; Keltner, 1994). In addition, people misjudge the intensity of their feelings (Keltner & Robinson, 1993) and are overconfident in their ability to predict others' emotions (Dunning, Griffin, Milojkovic, & Ross, 1990). Whether it is because people fail to account for situational factors (Dunning et al., 1990; Kulik, Sledge, & Mahler, 1986), or are unable to distinguish genuine from contrived emotions (Keltner, 1994), people are not as adept as they believe themselves to be at predicting how other people will feel or behave in different circumstances.

Complementing this bias is the fact that we believe that others can read our internal states more accurately than is actually the case. Most of us believe that other people can readily read what we are thinking and feeling (Gilovich, Savitsky, & Medvec, 1998) and fear that we let too much information about our emotional states leak out. We fall prey to an "illusion of transparency," overestimating the extent to which our emotions "leak out," and become detectable to others (Gilovich et al. 1998). Negotiators who fall victim to this bias may be convinced that their genuine feelings of joy, anger, or anxiety have seeped out, and may not believe they have successfully concealed their true attitudes. The illusion of transparency bias suggests that it is difficult to know if we have successfully maintained a poker face. We may think we are conveying too much or very little emotion, but our opponents may not notice it at all.

Misperception 2: Emotional states endure over time

Much prescriptive advice assumes that emotional states endure over time. We generally assume that a positive event, such as winning the lottery, getting a raise, and falling in

love will have a long-lasting effect on our overall happiness. We also assume that intensely negative events, such as getting fired, being in an accident, or losing a loved one will leave us unhappy forever. Contrary to popular belief, the emotional effects of extremely negative events or extremely positive events do not last nearly as long as we would think (Gilbert, Wilson, Pinel, & Blumberg, 1998; Suh, Diener, & Fujita, 1996; Wortman & Silver, 1989). We do not sustain prolonged levels of intense distress or elation, but rather, adapt to these hedonic states and return to a more neutral level of functioning (Frederick & Loewenstein, 1998).

Because our intuition about the effects of highly emotional events is often incorrect, we have a tendency to over-predict how long we will feel sad in response to a tragedy, or happy in response to a joyous event. For example, when people predicted how they would feel several months after the termination of a romantic relationship, they over-predicted the duration of their negative affect (Gilbert et al., 1998). Additionally, when faculty members predicted how they would feel after failing to achieve tenure, after receiving negative personal feedback, and after being turned down from an attractive job, they consistently over-predicted how long their negative affect would last – that is in comparison to the reports of people who *did* endure these unfortunate events (Gilbert et al., 1998).

According to the durability bias (Gilbert et al., 1998) we do not adequately account for the ability of our psychological immune system to *adapt*. Through a variety of psychological mechanisms, we are able to reinterpret, reinvent, or altogether ignore negative events to reduce the consequences of such events on our subjective well-being. These defenses provide a psychological shield that protects us from deviating too far below our chronic levels of subjective well-being. For this reason, it is quite likely that negotiators overestimate the impact a particular negotiation will have on their own subjective well-being, and overestimate the effect that a negotiated outcome will have on how someone else feels.

Indeed, people's prospective expectations and retrospective evaluations of events are more positive than the actual experience of the events (Mitchell, Thompson, Peterson, & Cronk, 1997). For example, in one investigation people anticipated that they would enjoy events like a trip to Europe, a Thanksgiving vacation, and a bicycle trip more than they actually did (as indicated by journals that were kept during the events), and remembered the events as being more enjoyable than they actually experienced them at the time. Their in-the-moment negative evaluations tended to be short-lived, and were quickly replaced by positive memories of the experiences (Mitchell et al., 1997).

What specific psychological processes account for this relative immunity to negative events? One possibility is that individuals selectively remember only the most positive aspects of an event so that their enduring memory will be positive. Likewise, they may distort or transform experiences so that an in-the-moment disappointment becomes a much-cherished memory. Most of us interpret an aggravating experience as a "comedy of errors," emphasizing the comic element more and more over time (Mitchell et al., 1997). Additionally, a desire for cognitive consistency compels people to have memories of an event that match their expectations of that event. Thus, a highly anticipated event, despite its actual quality, is likely to be remembered well. Overall, it seems that people are motivated to gloss over negative details of an event, and reframe events into a positive experience that will serve a positive self-image. This psychological immune

system is “invisible” (Gilbert et al., 1998) in that it is largely unknown to us until we are forced to utilize it, and, in fact its invisible nature is critical to its effectiveness. If we were made aware of the way in which we were distorting information to alleviate our negative affect, we would be unable to properly defend ourselves psychologically. The idea of a psychological immune system helps us understand why our negative affect dissipates rather quickly, but does not offer a compelling explanation as to why we often experience a similar dissipation of positive affect. Why is it that previous lottery winners have been found to be no happier than non-winners? (Brickman, Coates, & Janoff-Bulman, 1978).

One explanation is *focalism* – the tendency to focus on the precipitating event to the exclusion of all others (Gilbert et al. 1998). Events happen within the context of our lives yet we often ignore this context when estimating the impact that a particular event will have on us. Thus, if we are asked how we would feel six months after winning the lottery, we focus only on that winning event, ignoring all of the other events that may also impact our affective state. On the other hand, when we report our actual happiness six months later, the fight we had that morning with our spouse, the call from our child’s teacher, and the hunger pangs we are experiencing because we skipped breakfast are all very salient and have a distinct influence on our reported level of happiness. Thus, the context surrounding the event is often overlooked in people’s predictions, but this context plays a very significant role in actually determining people’s happiness.

Just as we mispredict the duration of our affective responses, so too, do we misconstrue the way in which the duration of our experiences influences our retrospective evaluations of them. One of the more universal beliefs is that people seek to maximize pleasure and reduce pain. Likewise, most of us assume that, if given the choice, we would prolong pleasurable or hedonic experiences, and diminish unpleasant experiences.¹ Contrary to basic psychological intuition, our evaluations of episodes are often based on trends rather than duration (Varey & Kahneman, 1992). For example, an episode that is painful for ten minutes is considered worse than an episode that is equally painful for the first ten minutes, but is followed by five minutes of less intense pain (Redelmeier & Kahneman, 1996).

Rather than basing evaluations on the aggregate level of pleasure or pain, we often base our evaluations on the peak and end moments of the experience (Redelmeier & Kahneman, 1996). This effect has been predominantly studied in terms of unpleasant or painful experiences. People’s evaluation of painful or unpleasant experiences is based on the level of discomfort at the most intense moment of the episode (the peak) and the level of discomfort during the final moments of the episode (the end) (Fredrickson & Kahneman, 1993; Kahneman et al., 1993; Redelmeier & Kahneman, 1996). Thus, episodes that end with intense pain, even if they are brief, are evaluated worse than episodes that begin with the same initial level of pain, but have additional moments of decreasing pain tacked onto their end. This phenomenon of duration neglect (Fredrickson & Kahneman, 1993) has been demonstrated with painful colonoscopy procedures (Redelmeier & Kahneman, 1996), aversive film clips, and the submersion of extremities (such as fingers) into painfully cold water (Kahneman et al., 1993), but not yet in negotiations. The duration of the episode, or its integrated utility, seems to have little, if any effect on the way we feel about the experience.

People also give disproportional weight to the final moments of an interaction when retrospectively evaluating social interactions (Fredrickson, 1991). Fredrickson (1991) showed that people who believed their social interactions would be terminated at the end of the experimental session judged the entire social relationship on the affect they were experiencing during the final moments of the interaction. There was no correlation, however, between the relationship evaluations and the affect experienced during the final conversation among people who believed that they would reconvene with their social partner the following day. This suggests that we base our social evaluations on the way we feel about the relationship at the perceived end of the encounter.

But what does all of this mean for the conduct of negotiations? Do we need to leave our opponent feeling good? The durability bias (Gilbert et al., 1998) suggests that we greatly overestimate how long we and others will feel strong emotions. Thus, although many negotiators assume that positive feelings in their opponent will last indefinitely, research suggests that such feelings may actually be fleeting. If this is the case, then leaving an opponent feeling good at the end of a negotiation will have little impact on future negotiations that are temporally distant. Leaving an opponent with negative feelings may also be relatively harmless if the durability bias is accurate and these feelings wear off before the next interaction. On the other hand, if the feeling at the end is the most prominent in defining the other person's evaluation of the interaction then leaving the opponent feeling good may be useful in terms of your general reputation with the other party. However, if it is only the feeling at the end of the negotiation that is key, this may mean that one can be demanding throughout the negotiation as long as at the end of the negotiation one makes a concession which is then highlighted to one's opponent to make him or her feel good.

Misperception 3: Emotion predicts behavior

Much prescriptive advice assumes a distinct causal relationship between emotion and behavior. Presumably, one reason why negotiators care about emotion in negotiation is because they believe that emotions predict behavior. Consider the maxim "do not sour the negotiation with an extreme opening offer." The assumption behind this belief is that an extreme opening offer will anger the opponent and cause him or her to behave in a hostile, uncooperative manner. However, people's access to their own internal states – namely their emotions – is relatively limited and often faulty (Wilson, 1985; Wilson & Dunn, 1986; Wilson & Schooler, 1991). As a result, people often mispredict what they are feeling, which leads to subsequent mispredictions about their corresponding behavior. Furthermore, when people try to introspect and monitor their feelings, it often leads to inconsistent behavior (Wilson, 1985; Wilson & Dunn, 1986; Wilson, Dunn, Kraft, & Lisle, 1989; Wilson, Hodges & LaFleur, 1995; Wilson & LaFleur, 1995; Wilson, Lisle, Schooler, Hodges, Klaaren, & LaFleur, 1993; Wilson & Schooler, 1991).

Focusing on feelings themselves presumably makes attitudes more salient, and is therefore thought to increase attitude–behavior consistency; however, analyzing the reasons for feelings reduces attitude–behavior consistency. For example, when students were simply asked to think about which beverages they preferred, there was increased attitude–

behavior consistency in the beverages they chose at their subsequent meal (Wilson & Dunn, 1986). When asked their reasons for preferring certain beverages, attitude-behavior consistency decreased at their subsequent meal.

Why does introspecting about reasons for preferences negatively affect attitude-behavior consistency? According to Wilson (1985) when people are asked to analyze the reasons for their feelings, they construct a plausible explanation to account for what are often unconscious, preverbal feelings. The problem is that people are often unaware of why they feel the way they do. When asked to defend their feelings, they focus on the most salient, reasonable interpretations, even if these explanations are inaccurate, or misrepresent their initial attitude. People search for “factors that are plausible and easy to verbalize even if they conflict with how they originally felt” (Wilson & Schooler, 1991, p. 182). “To the extent that these cognitions have a different valence from one’s affect, and to the extent that behavior remains affectively based, attitude-behavior consistency will suffer” (Wilson & Dunn, 1986, p. 251). This suggests that attitude-behavior inconsistency is due to the fact that once people have analyzed the reasons for their feelings, they adopt a new attitude; however, their behavior is still based upon their original attitude. The outcome is an apparent inconsistency between their newly formed attitude and their behavior. An alternative explanation suggests that people’s behaviors are actually aligned with their newly formed attitudes, and are thus inconsistent with the way they originally (and presumably, genuinely) felt.

Given that our attitudes are often inconsistent with our behavior, it is not surprising that we are overconfident in our ability to accurately predict our own behavior (Osberg & Shrauger, 1986; Vallone, Griffin, Lin, & Ross, 1990). One reason for overconfident self-predictions may be self-reflection (Wilson & LaFleur, 1995). As discussed above, people who analyze the reasons for their feelings and preferences demonstrate increased attitude-behavior inconsistency. Along with attitude-behavior inconsistency, introspection of this nature can lead to inaccurate and overconfident predictions about our own future behavior. The fundamental attribution error (Griffin, Dunning, & Ross, 1990; Nisbett & Ross, 1980; Ross, 1977) also contributes to people’s tendency to be overconfident in their self-predictions. Although most often understood as a social or interpersonal phenomenon, people also discount situational factors when making predictions about their own behavior. In other words, people fail to consider the uncertainty of situational construals in predicting their own future responses. For example, when participants in different situations were asked to predict how much money they would spend on certain events, and how much time they would spend engaged in certain activities, they did not consider the uncertainty of their situations when predicting their future behavior or their confidence in these predictions (Griffin et al., 1990). “To the extent that people naturally and habitually treat their situational construals as if they are error-free representations of reality, their predictions and assessments are bound to be overconfident” (Griffin et al., 1990, p. 1138).

People’s overconfidence in their ability to predict future behaviors transcends the intrapersonal realm, and is also evidenced in people’s predictions about the behaviors of others. Just as people discount the uncertainty of situational construal in predictions about themselves (Griffin et al., 1990), so too do they discount situational factors when making predictions about the future behavior of others.

Individuals often use misguided inferences about the role that other people's dispositions played in past behaviors, and are therefore likely to overestimate the role such dispositions will play in their future behaviors (Dunning et al., 1990). Furthermore, even when people predict the future behaviors of those with whom they are quite familiar, they tend to underestimate situational variables and mispredict these people's future behaviors. They also tend to be overconfident in the accuracy of these predictions.

It may be our failure to properly predict how others make sense of, or *feel* about, situations that limits our ability to predict their behavior. Consistent misprediction of other people's behavior suggests that we are unable to infer the thoughts and feelings of other people. Overconfident predictions suggest that we are not fully aware of how easily and how often we fail to understand the way in which other people are subjectively construing situations. If people are overconfident about their opponents' behaviors in a negotiation, it is likely that they are overconfident in their assessments about how their opponents are feeling about the negotiation.

The discontinuity between emotion and behavior is key to evaluating the maxim "do not sour the negotiation with an extreme opening offer." First, we must consider whether extreme offers arouse feelings of anger in our opponents. Whereas common sense may tell us they should, empirical evidence suggests the opposite. Even if an extreme offer does anger our opponent, it is not clear that our opponent's anger will impact his behavior in the negotiation since there is often a dissociation between our feelings and our subsequent behaviors (Wilson & Dunn, 1986; Wilson & Schooler, 1991). This suggests that feelings of anger may not necessarily lead to hostile or uncooperative behavior. Thus, we may be misguided in avoiding extreme opening offers. First, we may not be as accurate as we believe in assessing the emotional response that will be triggered by an extreme offer and second, we may be overestimating the relationship between individuals' emotional reactions and their subsequent behavior.

Conclusion

In this chapter, we have outlined three prescriptive approaches for negotiation: the rational strategy, the positive strategy, and the irrational strategy. At first glance, these three perspectives of negotiation appear to be in conflict, as it would seem impossible for a negotiator to simultaneously not show emotion, display positive emotion, and express extreme negative emotion. In addition, these three views give rise to prescriptive advice that is not only contradictory across perspectives, but also whose validity is often called into question by existing research. We argue that there are three common misperceptions about emotions in negotiations that permeate the strategies offered to negotiators. Recognizing these misperceptions does not eliminate contradictions in the prescriptive advice, but it may help negotiators understand when certain approaches may be better than others, and understand the limitations of all of the strategies.

It would seem natural to address the question of which strategy is indeed the most effective in negotiation. We have partially attempted to answer this question by concluding that the optimal strategy depends in large part on the type of bargaining situa-

tion. To this end, we drew a distinction between the type of bargaining game, cooperative or non-cooperative, and concluded that in many cooperative bargaining situations, positive, as well as rational, strategies can be highly effective; whereas in non-cooperative bargaining games (e.g., prisoner's dilemma, etc.) aggressive, and rational strategies can be effective. Thus, in our treatment of the negotiation literature, we distinguish two fundamental bargaining objectives that are related to outcomes: the creation of value (this is typically referred to as the win-win aspect of negotiating) and the distribution of value (this is typically referred to as the win-or-lose aspect of negotiating). The distinction between integrative and distributive aspects of negotiations is hardly new. Raiffa (1982), Lax and Sebenius (1986), and Bazerman, Mannix, and Thompson (1988) have argued that negotiators face a mixed-motive enterprise in that they must cooperate with the other party so as to ensure agreement and to find joint value but simultaneously compete with the other party concerning the distribution or allocation of the joint value. The contribution of this chapter lies in illustrating the interaction between these situations and emotional content and process of negotiations.

Certain prescriptive strategies regarding the use of emotion may apply to the value-creation process while others apply to the distributive process. The social psychological perspective that advances the "positive emotion" negotiator emphasizes joint or mutual outcomes in non-zero-sum and cooperative games, whereas the irrational negotiator perspective emphasizes individual outcomes in zero-sum and non-cooperative games. The rational approach and its prescriptive poker face pertain mostly to situations in which negotiators' interests are directly opposed – the distributive aspects of either type of zero-sum or non-zero-sum games.

The three approaches we identify can also be considered three distinct mental models. Mental models describe the ways in which people understand social and physical systems and often refer to the way they think about problem solving (Johnson-Laird, 1983; Rouse & Morris, 1986). Negotiators have different kinds of mental models that they can apply to a negotiation situation, such as a "fixed-pie" model versus a "creative problem-solving" model (Van Boven & Thompson, 2000). We argue that the rational, positive, and aggressive approaches represent three different mental models for approaching negotiation.

Applying the accurate mental model to the negotiating situation is key for successful outcomes. People often misapply mental models, for example, operating a home thermostat like a gas pedal (Gentner & Gentner, 1983). Imagine a person interested in heating his home views the thermostat as either that of a kitchen oven or a gas pedal in the car. The former assumes that, by turning on the heat to a higher temperature, like operating the gas pedal in the car, the house will reach a higher temperature at a faster pace. The latter, accurately realizes that the house, similar to a kitchen oven, will reach the temperature on the dial (either 375 degrees for baking a cake or 68 degrees for warming the house) at the same rate no matter whether the thermostat of either is initially set to the desired temperature or to a higher one. This analogy stresses the importance of having a mental model that is appropriate for the given situation. To the extent that their negotiating mental model – rational, positive, or aggressive – is appropriate for the particular type of negotiation, negotiators will be more successful.

While the three approaches seem to be very different, the prescriptive advice that flows from them shares a disconcerting commonality. Specifically, much of this advice is based

on flawed assumptions about people's ability to perceive emotions, the durability of emotions, and the relationship between emotions and behavior.

Throughout this chapter, we have attempted to identify some of the most common misperceptions regarding emotion. A better understanding of the role emotion actually plays in a negotiation can lead to a more informed use of the maxims and perhaps an ultimate blending of the three approaches. For example, a negotiator who recognizes that the way one feels at the end of an interaction is most important in defining that person's evaluation of the event, can use an aggressive approach throughout the negotiation to capture more of the pie, and can conclude the negotiation with a positive approach to secure a good reputation for future interactions. In the end, we argue that negotiators need to fit their negotiation strategies with the given situation and understand and capitalize on the psychology of emotion that underlies these strategies.

Note

- 1 The value of an experience is known as its utility (Varey & Kahneman, 1992). When we evaluate our experiences, we think of highly pleasurable experiences as having high utility, while a disagreeable experience is said to have high disutility.

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CHAPTER SEVEN

Mood and Emotion in Groups

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Speculation about how moods and emotions affect group life have been an important part of psychological inquiry for decades. The concept of emotional “contagion” has been with us since Le Bon’s (1896) early writings on crowd behavior and McDougall’s (1923) writings on the group mind. Patterns of emotional behavior were also an important part of group development theories since the writings of Bion (1961) and Tuckman (1965). In addition, the emotional strain involved in task performance was an integral part of Bales’ (1950) theory of equilibrium processes and phase movement in groups.

Over the past few decades, individual-level researchers investigating social phenomena have acknowledged that moods and emotions have profound influences on many areas of cognitive functioning. For example, mood has been found to affect aspects of persuasion and person perception, and it appears to do so through influencing the processes of memory, attention, and type of information processing (Forgas, 1992). More recently, however, it has been acknowledged that many aspects of affective phenomena have interpersonal antecedents and consequences (Wallbott & Sherer, 1986), and that emotional expression has an important impact on social interaction. Thus research should logically be directed toward examining the effects of mood and emotion on interpersonal interaction among group members.

The purpose of this chapter is to briefly review some of the past and the present research on mood and emotion in groups by examining two broad categories of effects – affect as an index of group development, and affect as a compositional factor. A series of questions that may be useful in directing future research efforts are then presented.

Types of emotional experience

Although the concept of group emotional life has been central to many theories of group structure and development, precise definition and measurement of group mood or emotion has not received a great deal of attention. For example, group emotion has been

measured by the number of socio-emotional communicative acts (Bales, 1950; Tuckman, 1965) or by questionnaire measures of affective ties between group members (Mudrack, 1989). Researchers have also defined a variety of types of emotional experiences that may occur primarily in group settings. For example, the concept of “group cohesiveness” refers to the affective ties that bind a group together, or to a sense of solidarity or esprit de corp that may develop over the course of group interaction (Hogg, 1992; also see Hogg, this volume, chapter 3). More recently, George (1990) coined the term “group affective tone” to describe the characteristic level of positive or negative affect experienced by some groups. These varied definitions and measures of group emotion reflect large differences in the underlying type of affect experienced by the group, and this chapter will retain such a broad definition.

Individual-level researchers have also described a variety of different types of affective experiences. The term “affect” is a general term used to describe a variety of feeling states including mood, emotion, and dispositional affect. However, researchers have tended to make distinctions between “mood” and “emotion” along a number of different dimensions (Isen, 1984). Emotions tend to be more intense in nature than are moods and tend to be target specific – that is, they are often directed toward a specific provoking stimulus. Moods, on the other hand, are more diffuse, and can potentially affect a wider range of stimuli (Frijda, 1986). Finally, emotions tend to be labeled with specific emotions terms, such as anger, happiness, and sadness (Plutchik, 1980), whereas moods tend to be labeled simply along a positive–negative or pleasant–unpleasant dimension (Nowlis, 1960). In contrast to both mood and emotion, “dispositional affect” describes a generalized tendency on the part of an individual to react in characteristically positive or negative ways to a range of stimuli (Watson & Clark, 1984). Since individual-level affective experiences may combine to form a group-level affective experience, all of these different individual-level and group-level affective terms are important in the understanding of the effects of mood and emotion on group experience.

Group Development

This section examines emotional factors that are involved in studies of group development. In general, studies of group development try to account for regular patterns of emotional expression as groups progress toward group goals. That is, group development researchers try to account for patterns of growth and change that occur as a group moves from the beginning to the end of its life cycle. Most models of group development assume that groups pass through predictable stages or phases as they develop, with each stage characterized by particular socio-emotional challenges and outcomes.

Bales’ research on phase movement in groups

Research on group development has been ongoing for nearly 50 years, beginning with Bales and Strodtbeck’s (1951) pioneering work on phases that occur in decision-making

groups. A number of researchers have posited that group movement toward particular goal states involves both progress in group locomotion activities (Festinger, 1950) and progress in group maintenance activities (Thibaut & Kelley, 1959) or emotional repair and well-being. Bales and colleagues (Bales, 1950; Bales & Slater, 1955; Bales & Strodtbeck, 1951) proposed that, in fact, group progress involved alternating attention devoted to two sets of concerns – instrumental, or task-related concerns and expressive, or socio-emotional concerns.

According to Bales (1950), these concerns manifest themselves in terms of a series of continual shifts to establish equilibrium between instrumental and expressive activities, both at a micro act-by-act level and a more macro or phase level throughout the problem-solving session. The micro-level shifts were predicted by the equilibrium hypothesis, which posited that action in one set of activities (e.g., instrumental activities) created tension in the other set of activities (e.g., expressive activities). When tension becomes too high, progress toward the group goal ceases until that tension is reduced by reparative action in the corresponding category. Thus, groups continually cycle between instrumental and expressive communicative acts.

Bales also described macro-level shifts that corresponded to phase movements in the group. On the instrumental side, groups engage in activities concerning first orientation, then evaluation, and then control as the group progresses from the beginning to the end of a problem-solving session. To reflect the idea of an equilibrium between instrumental and expressive concerns, Bales also proposed corresponding activity in expressive categories. Both positive and negative socio-emotional acts increase from the beginning to the end of a session, as groups move from the relatively unemotional orientation stage to the more controversial control stage. Thus, for Bales, emotional expression was a central part of group functioning and performance.

Bales' (1950) work also included the development of a structured set of categories for observing communicative acts within problem-solving groups in order to systematically document the idea of both phase movement and equilibrium processes in groups. A consistent finding was that two kinds of leaders tended to differentiate in groups – a task specialist and a socio-emotional specialist (Parsons & Bales, 1955). Bales and his colleagues speculated that this differentiation was one way of dealing with the equilibrium problem. The strain created by the task specialist was best handled by a second, more socio-emotional leader. Elements of these two styles or specialties can be seen in more modern leadership theories, including Fiedler's contingency model (1981), Blake and Mouton's leadership grid (1964), and Hersey and Blanchard's theory of situational leadership (1976).

Models of group development

Since that time, literally hundreds of group development studies have been conducted, and the majority of studies and theories about group development highlight the importance of the group dealing with emotional issues. For example, Bennis and Shepard (1956), through their observations of T-groups, proposed that groups pass through two major phases of development, the first including issues of authority and structure, and

the second including issues of intimacy and interdependence. Bion (1961) suggested that groups must work on emotionality issues, expressed in terms of dependency, fight/flight, or pairing, in order for progress toward group goals to continue. Tuckman (1965), in reviewing and integrating the existing literature on group development, proposed that groups go through identifiable phases of forming, storming, norming, and performing, with a final stage of adjourning added later by Tuckman and Jensen (1977). The storming stage in particular is one that is fraught with conflict as group members vie for status and roles within the group.

Since those researchers were primarily interested in group development in therapy groups, the emotional importance of the group and resolving emotionally laden issues was obviously central. However, studies developed on laboratory groups also suggest similar emotionally laden stages. For example, Schutz's (1966) model of group development focused on member needs at various periods throughout the group's life cycle. The first need is for inclusion and a sense of belonging to the group. Need for control is reflected by a struggle to sort out power and authority issues among group members. Finally, an affection need is reflected in work on interpersonal relations within the group.

More recently, Wheelen (1990, 1994) has proposed a model of group development that integrates findings from both therapy and laboratory groups. She notes that there are commonalities among proposed models regardless of type of group to which the model has been applied, length of time that the group interacts, and other variations, and these commonalities are described in her five-stage model. Stage 1, *Dependency and Inclusion*, is characterized by member dependency on the group leader and by initial polite attempts at determining group structure. Thus, this stage is characterized by emotional control rather than emotional expression. Stage 2, *Counterdependency and Fight*, is characterized by conflict among members and leader. Similar to the "storming" phase in Tuckman's (1965) model, negative affect is most prevalent. However, this conflict is assumed to be essential to the development of cohesion and the establishment of shared values. Stage 3, *Trust and Structure*, is characterized by the more mature determination of the elements of group structure and performance norms. Stage 4, *Work*, is characterized by effective progress toward group goals. Finally, Stage 5, *Termination*, is reflected in evaluation of past work, feedback, and the expression of feelings about fellow group members. Thus, emotionality also characterizes the final stage of group development.

Many of the past models reviewed above make particular assumptions about both the universality of the proposed stages and the need for groups to pass through each phase in succession. Other models are more cyclical in nature, positing that certain stages may recur as group members confront similar issues at a later date (Arrow, 1997). Still other theorists propose that group development cannot be characterized by phases or stages, but rather that sets of activities, including activities devoted to both group locomotion and group maintenance, occur simultaneously. Poole's contingency model (1983), for example, suggests that groups engage in three intertwining sets of activities involving task, relational, and topical focuses. Thus, group emotional work occurs simultaneously with group task work. McGrath's (1991) TIP model also describes groups as simultaneously engaging in work devoted to satisfying production, well-being, and member support functions.

Summary of group development

Theories of group development view group emotions as being a necessary part of group progress. Group emotion is a part of or a reaction to instrumental group work, and thus is a necessary part of the pacing of the group as it progresses toward its group goal. Group stages or cycles are characterized or defined by different types of emotional activity, and thus can serve as an index of the group's maturity.

Group development theories therefore view group emotions as arising from the natural consequences of interaction between group members over time. That is, different emotions are evoked at different times and the emotions that arise stem from the activities of the group itself. The next section, involving affective group composition, examines mood and emotion more as a characteristic of the group as a whole.

Affect as a Factor in Group Composition

The term "group composition" is used here in a very broad sense and includes what other researchers may at times describe as input conditions or at times as consequences of group interaction. The focus of this section is on the affective experience of the group as a whole, both in terms of group-level emotional experience (cohesiveness) and in terms of individual-level emotional experiences that form the parts of a group (manipulated mood). A number of broad categories of effects are examined including emotional contagion, group affective tone, and mood as a manipulated input variable to the group experience.

Emotional contagion

"Emotional contagion" refers to the process whereby the moods and emotions of those around us influence our own emotional state. That is, it is the process through which we "catch" other people's emotions. Although originally theorized in the context of pathological crowd behavior (Le Bon, 1896) or the "group mind" (McDougall, 1923), more recent research has focused on the more commonly occurring day-to-day forms of emotional contagion that can occur from mere exposure to others' emotional states. Hatfield, Cacioppo, and Rapson (1993, 1994) call this "primitive emotional contagion," a relatively automatic and unconscious tendency to "mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person and, consequently, to converge emotionally" (Hatfield et al., 1992). Contagion in general is thought to be multiply determined by a package of psychophysiological, behavioral, and social phenomena. It can elicit similar responses in a target (smiling back at someone else's smile, Hinsz, 1991) or complementary responses (countercontagion, such as when a parent finds a child's anger to be amusing). Further, Hatfield et al. (1993) argue that emotional contagion produces the important consequence of synchrony or entrainment of atten-

tion, emotion, and behavior and argue that this synchrony has an adaptive function for social entities.

A number of basic processes have been proposed to account for emotional contagion. For example, emotional contagion may occur through basic learning processes. Emotional contagion can be a conditioned emotional response, such as when two people's affective experiences are habitually linked, or an unconditioned emotional response, such as when a loud voice causes momentary fear. Hatfield et al. (1993, 1994) focus on interactional mimicry and synchrony, the automatic imitation and coordination of facial features, movements, and vocal rhythms that can occur in interaction, as a potential process underlying emotional contagion. People seem to automatically mimic the facial, movement, and vocal rhythms of others, and, as a consequence of feedback from this mimicry, "catch" their emotions.

McIntosh, Druckman, and Zajonc (1994) use the somewhat more general term "socially induced affect" to refer to situations where one person's affect is induced or caused by another person's affect. They feel that the causal implications of the term "induction" are more appropriate than the transference implied by the term "contagion." Further, "induction" denotes that some kind of affective experience, although not necessarily an identical one, is induced in another person. In their review of the literature, McIntosh et al. (1994) find stronger evidence for concordant rather than discordant socially induced affect, and suggest that the strength of the affect induced may be a function of how similar or well liked the source is by the target. They also suggest that plausible mechanisms involved in socially induced affect involve contagion, conditioning, and mimicry.

A third, related concept that has received some research attention involves behavioral entrainment (Condon & Ogston, 1967; Kelly, 1988; McGrath & Kelly, 1986) or interaction synchrony (Warner, 1988). Behavioral entrainment refers to the processes whereby one person's behavior is adjusted or modified in order to coordinate or synchronize with another's behavior. Synchrony usually refers to the coordination of both micro- or macro-body movements, but has also been used more broadly to refer to the coordination of affect and attitudes between interacting partners (Siegman & Reynolds, 1982). The outcome of this synchrony, generally, is positive affect, which can take the form of liking for the partner (Kelly, 1987), satisfaction with the interaction (Bernieri, Reznich, & Rosenthal, 1988), or greater group rapport (Tickle-Degnen & Rosenthal, 1987). Thus, with behavioral entrainment, affect arises as a byproduct of smooth interaction rather than as the result of transference.

Evidence for emotional contagion. There is very strong evidence for many of the processes that are proposed to underlie emotional contagion (and socially induced affect or behavioral entrainment as well). A number of researchers have found evidence for many forms of behavioral synchrony, including synchrony in conversational rhythms (Jaffe & Feldstein, 1970; Warner, 1988), nonverbal behavior (Tickle-Degnen & Rosenthal, 1987), and more general interaction behavior (Bernieri, 1988). Evidence for facial mimicry has also been identified (Bavelas, Black, Lemery, & Mullett, 1987). In sum, there is plentiful evidence that we mimic or synchronize with the emotional behavior of others (Hatfield et al., 1994).

Evidence is also found for the effect of facial, postural, and vocal feedback influencing our own emotional state. A number of researchers, drawing on the facial feedback hypothesis, have demonstrated that the manipulation of facial muscles involved in the expression of particular emotions influences the degree to which the model experiences those emotions (Duclos, Laird, Schneider, Sexter, Stern, & Van Lighten, 1989; Larsen, Kasimatis, & Frey, 1990; Strack, Martin, & Stepper, 1988). Duclos et al. (1989) report evidence that postural feedback may also intensify emotional experience.

Finally, evidence for the convergence of emotional experience can be found in many areas of research, including developmental, clinical, social, and psychophysiological areas (see Hatfield et al., 1994, for a review). In addition, there is some evidence that such synchrony and convergence are an important component in group rapport (Tickle-Degnen & Rosenthal, 1987).

Individual differences in emotional contagion susceptibility or transmission. A variety of individual difference factors have been proposed that suggest that certain kinds of people may be more likely to “catch” the emotions of others and other kinds of people may be better at transferring their emotions. For example, people who are high in feelings of interrelatedness, who are good decoders of emotional expressions, and who score high on emotional contagion scales are more likely to catch the emotions of those around them (Hatfield et al., 1994). Women, perhaps by serving as a proxy variable for the factors listed above, may also be more likely than men to be susceptible to emotional contagion effects.

On the other hand, people who are high in nonverbal expressiveness seem to be better able to transmit their emotions to others (Sullins, 1989, 1991). Hatfield et al. (1993) also suggest that transmitters must be able to feel, or at least to express, strong emotions, and that they should be relatively insensitive to those who are experiencing incompatible emotions. Their recent work with the emotional contagion scale (Doherty, Orimoto, Hebb, & Hatfield, 1993) also supports the notion of individual differences.

Emotional contagion and group composition. The process of emotional contagion implies that group members, if composed of people who are at least somewhat susceptible to emotional contagion, will converge in affect over time leading to a more or less affectively homogeneous group composition. That is, unless particular limiting conditions are in place that prevent emotional contagion, groups working together over time should come to display similar levels of positive or negative affect. Some recent research also suggests that a group leader, especially one who is high in expressiveness, may be particularly likely to influence the emotional characteristics of his or her group. Barsade and Gibson (1998) suggest that knowledge of the emotional state of highly influential people in groups, or knowledge of extremities of the emotion of influential persons in groups may be important in determining group affective composition.

In addition, it is plausible that pessimistic or negatively toned groups may dissolve over time, while optimistic or positively toned groups would be more likely to be maintained, especially when referring to voluntary groups. What is the evidence for affective convergence in groups and what are the consequences of such emotional homogeneity?

Group affective tone

George (1990, 1996) has recently proposed that, not only can many groups be characterized by a homogeneous or internally consistent level of affect or “group affective tone,” but also that these characteristic levels of affect can affect a variety of responses or behaviors within the group (George, 1991, 1995; George & Brief, 1992). For example, in a study of sales teams, George (1990) found that group affective tone, as measured by aggregating the teams’ dispositional positive and negative affect, predicted a number of important outcomes. Mean positive dispositional affect levels were negatively correlated with absenteeism, while mean negative dispositional affect levels were negatively correlated with customer directed pro-social behavior. Later work showed important associations between group affective tone as measured by aggregating reports of team member mood state and team performance.

More generally, an optimistic or positive emotional or affective tone is often cited as an important factor in many successful groups. For example, cohesion is often implicated in successful performance of various types of groups (Evans & Dion, 1991; Mullen & Copper, 1994). Other studies have shown that a positive emotional character, or “internal group harmony” can be the most important component in determining the quality of group outcomes (Hackman, 1991; Williams & Sternberg, 1988).

George (1996) argues that, although not all groups may possess a group affective tone, a number of processes work toward producing consistent levels of affect within particular groups. For example, borrowing from Schneider’s (1987) attraction–selection–attrition framework, George suggests that people with similar levels of dispositional affect may be attracted to and form particular groups, and those with a dissimilar dispositional affect may leave that particular group, leading to a group composed primarily of persons with similar levels of dispositional affect. She also suggests that group members are exposed to similar types of tasks and similar group outcomes which commonly influence their level of group affect. Furthermore, she suggests that group members may be actively socialized as to a group’s affective tone, thus ensuring consistency in this measure across time.

George (1990, 1996) proposes that group affective tone is a distinctively group-level concept. Group affective tone only exists when a group demonstrates high levels of intermember consistency with respect to reports of affect levels. If such consistency exists, then individual-level reports of affect may be combined into a group average which reflects the group’s affective tone. If intermember consistency does not exist (George suggests using James, Denaree, & Wolf’s, 1984, method of estimating within-group interrater reliability), then an affective tone does not exist for that particular group.

Homogeneity versus heterogeneity of group affect. George’s work suggests that important outcomes are associated with homogeneous levels of positive or negative affect within a group. However, Barsade and Gibson (1998) point out that gains or positive group outcomes are potentially associated with either homogeneity or heterogeneity in affective composition. With respect to the positive benefits of group affective homogeneity, they cite studies suggesting positive relationships between personality composition and per-

formance in groups, noting that many personality variables (such as extroversion or neuroticism) have distinctively emotion-laden implications (Mann, 1959). Furthermore, they suggest that affect is a dimension upon which people judge similarity to one another, and that based upon the well-known similarity-attraction findings (Byrne, 1971), affective homogeneity or similarity should lead to higher levels of member attraction or cohesion. As a consequence, group members should feel more comfortable with each other, should engage in more cooperative behavior, and thus should attain more positive group outcomes.

It is also possible that particular levels of homogeneous affect may prove detrimental to group performance. For example, there is some evidence that cohesiveness has a curvilinear relationship to group creativity (Lott & Lott, 1965; Woodman, Sawyer, & Griffin, 1993). That is, both very high and very low levels of interpersonal cohesiveness were detrimental to creative performance. Such a curvilinear relationship may also exist for the relationship between particular homogeneous mood states and performance. For example, it is possible that extremes of both positive and negative moods will be associated with poorer performance than more moderate levels.

Barsade and Gibson (1998), citing organizational evidence of the benefits of heterogeneity, also point out that affective similarity in particular circumstances may also lead to negative consequences. For example, a group composed of members with high negative dispositional affect may be unduly pessimistic and unproductive. Drawing from the need compatibility literature, they argue that diversity of affective types may also lead to positive group outcomes, especially when dealing with specific emotions, such as anger or euphoria, which may need to be tempered in order for progress to be made. Extreme heterogeneity of moods, however, may also be disruptive to the smooth flow and coordination of efforts necessary for effective performance.

Cohesiveness Group cohesiveness might be considered to be a special type of group affective tone, although one that is more limited in range of emotional expression and perhaps more cognitively mediated. Group cohesiveness generally describes emotional attraction among group members, although other types or dimensions of cohesiveness, such as commitment to the task or group pride, have also been identified (Mullen & Copper, 1994).

The literature on cohesiveness is vast and has been well reviewed in previous literature (Evans & Dion, 1991; Hogg, 1992; Mudrack, 1989; Mullen & Copper, 1994). In general, however, studies have shown that cohesive groups are better able to place pressure on their members toward uniformity in behavior and conformity to group norms (Festinger, 1950; Hackman, 1991; Hogg, 1992). In addition, a recent review of the literature suggests that there is a positive relationship between cohesiveness and group performance (Mullen & Copper, 1994), although this relationship is small in magnitude. The cohesiveness–performance relationship is stronger when cohesiveness is defined in terms of commitment to the group task rather than as emotional attraction. In addition, there seems to be a more direct relationship from performance to cohesiveness than from cohesiveness to performance. Further, cohesiveness–performance relationships were stronger in small groups and real groups, and especially strong among intact sport teams. It may be interesting in the future to investigate whether the basic

findings concerning cohesiveness generalize to other positive affective experiences in groups as well.

Manipulation of mood in groups

One way of creating affectively homogeneous or heterogeneous groups, of course, is to manipulate the mood of individuals coming together into a group situation. Research taking this approach, however, is in its infancy. Since the few studies conducted in this area draw on individual-level findings and theories in order to formulate their hypotheses, this section will start with a brief review of past individual-level findings with respect to mood and social judgments.

A number of researchers have reported results that suggest that mood states bias judgments in a manner that is consistent with the mood that was induced (Isen, 1975, 1984; Tversky & Kahneman, 1973). That is, positive moods bias judgments in a positive manner, whereas negative moods bias judgments in a negative manner. These findings are generally interpreted based on the concept that mood states are linked in memory with other associated concepts. Mood can then influence social judgments and evaluations through a number of different processes, such as the priming of mood-consistent associations that influence the interpretation of ambiguous information, and directing attention to mood-consistent information.

Other researchers have focused on the effect that mood states have on information processing (Forgas, 1992; Sinclair & Mark, 1992; Worth & Mackie, 1987). In their integrative model, for example, Sinclair and Mark (1992) argue that mood states lead to changes in cognitive capacity, mood maintenance/repair strategies, and/or the use of mood as information, and that these factors in turn account for the heuristic versus systematic processing differences found for positive versus negative mood states. Forgas's (1992) AIM model also assumes that affect can play dual roles in judgments in that it can affect both processing and informational influences.

Still other researchers have focused primarily on the information value that a mood state may have with respect to a given situation (Schwarz & Clore, 1988) and how that information value may impact information processing, in part to account for the often asymmetrical effects of positive and negative moods. This "mood-as-information" approach suggests that a positive mood signals that the situation is benign and not worthy of further attention. Therefore, people in happy moods tend to engage in less effortful or vigilant information processing. Negative moods, on the other hand, signal potential threat, and lead individuals in negative moods to engage in effortful and systematic processing of information. Although the mood-as-information approach may also sometimes predict mood consistent effects in judgments, it focuses more on the information-processing strategies that underlie mood effects.

All of these models may be important in predicting and explaining the effects of mood and emotion in group situations. However, only a handful of studies have actually examined the effects of induced mood on any type of group situation. Forgas (1990), for example, induced positive, negative, or neutral moods in individual or group participants and asked them to make ratings of nine person categories on a number of dimensions.

Consistent with previous research, individual judgments were biased in a mood-consistent manner, such that happy individuals made more positive judgments, and sad individuals made more negative judgments, compared to controls. The effect of being in a group was to accentuate the bias of positive moods, with happy groups making even more positive judgments, but to attenuate the bias of negative moods, with sad groups making less extreme negative judgments. Presumably, group members in negative moods engaged in more controlled information processing, and thus were not as influenced by mood state. These results are somewhat consistent with work that examines groups under stress. For example, Staw, Sandelands, and Dutton (1981) have reported that stressful environments lead to more rigid information processing, similar to negative moods leading to more systematic processing of information.

A few studies have also examined the effect of mood states on cooperative behavior among small group members. For example, Hertel and Fiedler (1994) examined the effects of induced positive and negative moods on cooperative and competitive behavior in a four-person prisoner's dilemma game. They found that positive mood states did not directly increase cooperative behavior, but rather increased the variability of responses. Across blocks of trials, positive mood subjects' most cooperative responses were more cooperative, and their most competitive responses were more competitive, than negative mood subjects. In a more recent study (Hertel, Neuhof, Theurer, & Kerr, under review), the effects of positive and negative moods were examined in the context of a chicken dilemma game. The results here suggested that the reliance on heuristics exhibited by individuals in positive moods increased adherence to salient norms in the situation, such as imitation of partners' behavior. Negative moods induced more systematic processing of information and led to a more rational decision-making strategy, such that individuals defected when others' cooperation was high, but cooperated when others' cooperation was low.

Group researchers are beginning to examine more fully the meaning and the effects of information processing in groups (Hinsz, Tindale, & Vollrath, 1997). It is likely that such research will also begin to integrate the implications of affective influences on information processing as well. As it does, there are some important issues to consider. Some conceptual issues include: Is group information processing analogous to individual information processing? Is group mood or emotion something other than the sum of individual affective experiences? Methodological questions include: Is a group mood an emergent property of a group, or is it something that can be induced or produced from combining the moods of the individual group members? For example, if a group is successful at working on a task and comes to feel good, is that the same as grouping good-feeling individuals together into a group. In addition, can we develop a reliable group-level measure of group mood? These important methodological and conceptual issues will undoubtedly be explored in the near future.

Questions for Future Research

The bodies of literature reviewed above describe a variety of approaches to theorizing and investigating various affective phenomena in groups. These approaches differ greatly in

how they treat emotional phenomena in groups. Some describe emotionality as a process of interpersonal interaction. Some treat emotionality as a group-level descriptor that sets the context for group performance. Others use emotionality to describe regularly appearing sequences of behavior. The following section suggests a useful model for integrating some of the past research on mood and emotion in groups and for suggesting new areas of investigation.

The input–process–outcome model presents a typical way of thinking about small groups (Hackman & Morris, 1975; McGrath, 1984). The input–process–outcome model assumes that various input characteristics, such as task type, group structure, and individual differences, have their impact on group performance through their effect on group process. Such a framework might be useful for framing questions concerning the impact of mood and emotion on small groups. In particular, the model suggests that mood may affect group performance directly or interactively as an input characteristic, as a context or component of group process, or as a consequence or outcome of group interaction. Possible effects of mood at these three points are suggested below.

Mood and emotion as an input characteristic

Mood or emotion may impact group performance either directly as an input characteristic, such as is suggested by the work of George (1990, 1996), or through interactive effects with other group input factors. For example, mood or emotion may interact with task characteristics or group structure to affect group performance.

A number of models of individual-level mood effects suggest that moods may impact the types of cognitive processing of information engaged in by individuals (Forgas, 1992; Schwarz & Clore, 1988; Sinclair & Mark, 1992). Specifically, positive moods seem to promote more heuristic processing of information, whereas negative moods seem to promote more systematic processing of information. If individual group members are engaging in these different types of processing modes, then group performance would seem to depend on the degree to which heuristic or systematic processing of information is appropriate for effective group performance on any particular task. For example, we might expect that positive moods and heuristic processing may facilitate performance on simple or routine tasks, or what have been referred to as “problems” (Katz & Kahn, 1978). On the other hand, more systematic processing of information prompted by negative moods may be more effective for complex or novel problems, or what have been referred to as “dilemmas” (Katz & Kahn, 1978).

Moods and emotions may also interact with aspects of group structure. For example, Ridgeway and Johnson (1990) describe how expressions of positive and negative affect in group interaction are tied to aspects of member status and group norms concerning the development of group solidarity. Norms operate, for example, to constrain the expression of negative socio-emotional behavior, whereas expressions of positive socio-emotional behavior are relatively uninhibited, especially with respect to low-status group members reacting to high-status group members. Norms for the expression of affect may differ from group to group (Hochschild, 1983). We might expect to find more homogeneity or regularity of expressions of affect in highly cohesive groups where norms for emotional expressions are likely to be more crystallized and enforced (Jackson, 1966).

Group size may moderate the effect of affect on group structure or performance. For example, as group size increases, cohesiveness decreases, norm enforcement decreases, and member participation rates become more disproportionate. As a consequence, one would expect less homogeneity of affect within these groups, and less crystallized norms for emotional expression. One might also find that, as group size increases, the emotional tone of a group is more heavily influenced by single individuals in higher status or more powerful positions in the group.

Leadership variables may also affect the affective structure of groups. For example, theories of transformational or charismatic leadership describe how a single particularly influential leader can profoundly shape the goals and the emotional character of groups (House & Baetz, 1979). Charismatic leaders derive their influence in part by their ability as inspirational speakers, projecting an appealing and emotionally charged vision of the future. Followers in turn become highly emotionally attached to the group and expend great effort and sacrifice for the good of the group (Burns, 1978; House & Baetz, 1979).

Mood and emotion as a context or process of group interaction

Much of the group development literature focuses on how types of emotional expression are tied to fairly regular or consistent phases of group development. However, more recent work suggests that other temporal patterns of emotional expression may also exist. Gersick (1988), for example, has identified a midlife crisis for groups that is characterized by anxiety and worry about the group's current procedures for accomplishing its given task. Such an emotional crisis signals a change in group procedures to more effective strategies for continued progress toward group goals (Arrow, 1997; Gersick, 1988).

Recent literature also suggests that an emotional context may be dictated by aspects of organizational culture (Kunda, 1992; Van Maanen & Kunda, 1989). Specifically, organizations may develop particular norms for emotional display that constrain the feelings and expression of emotion among organizational members (Hochschild, 1983; Van Maanen & Kunda, 1989). It is likely that such feeling and display norms also exist at the group level (Barsade & Gibson, 1998). We know, for example, that therapy groups attempt to establish norms encouraging the free expression of emotions (Stokes, 1983), whereas customer service personnel are encouraged to express only positive emotions (Hochschild, 1983). Further investigation of emotion norms in various contexts is warranted.

Mood and emotion as a consequence of group interaction

It has already been suggested that a number of processes exist to push groups toward homogeneous levels of affect. For example, emotional contagion processes may cause group members to catch other group members' moods. Emotion norms may encourage only specific types of emotional expression. It therefore seems reasonable to assume that homogeneous levels of affect, or a group affective tone (George, 1990, 1996), will develop as a consequence of group interaction.

The particular character of this group affective tone, in turn, has implications for a number of different outcomes. For example, the positivity or negativity of affective expressions may have implications for the stability of the group. More negative or pessimistic groups may be more likely to have high member turnover rates and may be more likely to disband than groups that are more positive and optimistic in emotional tone.

More generally, however, the emotional consequence of a prior group interaction may serve as an input to a future group interaction (Levine & Moreland, 1990). In that way, the emotional life of a group takes on a more dynamic and cyclical character. In addition, all of the questions posed above may be qualified by consideration of more global issues, such as the stage of development the group is in or the physical and social environment surrounding the group interaction.

Conclusions

The importance of mood and emotion to group interaction and performance is once again becoming recognized. In the past, research attempting to document the emotional character of communication within the group, such as studies of group development and group interaction process analysis, proceeded somewhat independently of work on group outcome or performance. With our increased knowledge of affective influences on individual-level judgments and processing of information, and with the increased emphasis on teams and work groups in industrial and organizational settings, the importance of examining how group moods and emotions influence group-level judgments and information processing is now being recognized. The possible ways that mood and emotion can affect group interaction and performance noted above are only a partial list of importance influences. More questions will emerge as more researchers contribute to this important and growing area of research (see, for example, Thompson, Medvec, Seiden, and Kopelman, this volume, chapter 6).

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CHAPTER EIGHT

The Psychology of Crowd Dynamics

Stephen Reicher

1 The Challenge of Crowd Psychology

Crowds are the elephant man of the social sciences. They are viewed as something strange, something pathological, something monstrous. At the same time they are viewed with awe and with fascination. However, above all, they are considered to be something apart. We may choose to go and view them occasionally as a distraction from the business of everyday life, but they are separate from that business and tell us little or nothing about normal social and psychological realities. Such an attitude is reflected in the remarkable paucity of psychological research on crowd processes and the fact that it is all but ignored by the dominant paradigms in social psychology. The second edition of *The Handbook of Social Cognition* (Wyer & Srull, 1994) has no entry in the index under “crowd.” Indeed, within a discipline that often views literature from a previous decade as hopelessly outdated, the little reference that is made to such research still tends to focus on Gustave Le Bon’s work from a previous century (Le Bon, 1895). As we shall shortly see, it is most clearly reflected in the content of Le Bon’s research and that of his followers. It was Le Bon, in terms of his theories if not his practices, who divorced crowds from their social context. His theory assumed that crowd participation extinguishes our normal psychological capacities and reveals a primal nature, which is usually well hidden from view. It was he who, with typical Victorian gusto, consigned crowds to the realms of a social scientific theatre of curiosities (cf. Reicher, 1996a; Reicher & Potter, 1985).

The aim of this chapter above all else is to free crowd psychology from being imprisoned at the margins and to restore it to its rightful place at the center of social scientific inquiry and, more specifically, of social psychological thought. As I have previously argued (Reicher, 1982, 1987) one of the more remarkable features of traditional crowd psychology is that it has tended to constitute a theory without a referent. Rather than starting from a set of phenomena in need of explanation, a set of explanations was elaborated

in order to underpin certain ideological presuppositions about the crowd – or at least the suppositions of gentleman observers who viewed the masses with alarm from the outside. To them, crowds seemed anonymous, their actions inherently destructive and random, their reasons unfathomable. However, these hostile and external observers never took care to investigate the patterns of crowd action and the conceptions of crowd members to see if their suppositions were warranted. If one did – and there is a growing literature by historians and social scientists that does (e.g. Feagin & Hahn, 1973; Krantz, 1988; Rude, 1964; Williams, 1986) – then two things would become immediately apparent. The first is that crowd action is patterned in such a way as to reflect existing cultures and societies. Perhaps the classic example of this remains E. P. Thompson's study of 18th-century food riots in England (Thompson, 1971, 1991).

Of all examples of crowd action, one might at first think of food riots as a domain in which social analysis has least to offer. Surely starving people are simply motivated by a biological need to eat, to grab – by force if necessary – whatever food is available, and to make off with it. And yet, as Thompson notes, people are often passive in the face of starvation and protests are comparatively rare. When they do occur, food riots are far from inchoate explosions. In an analysis of several hundred such riots in England around the turn of the 19th century, Thompson shows how riots had a characteristic pattern both in terms of how they started and how people behaved within them. Moreover, these patterns reflected collective belief systems. Thus the riots occurred in the context of a shift from feudal to market-based economies. These were matched by different “moral economies.” For the one, produce was meant to be sold locally and, for the other, produce was legitimately sold where it fetched the highest price. Riots generally started when grain was being transported to a distant market and the populace attempted to enforce their moral economy against that of the merchants. Events then unfolded in a way that reflected localist beliefs: Grain was sold at a popular price and the money – sometimes even the grain sacks – were handed back to the merchants. In short, and in complete contrast to prevalent visions of anarchy, the food riot demonstrates how crowd action is shaped by ideology and social structure.

The second obvious feature of crowd phenomena is that they are not only shaped by society but also that they in turn bring about social change. Indeed the changes wrought by crowds exist at three levels. There is change in the ways that crowd members see themselves as social actors. Autobiographies and studies of activists (e.g. Biko, 1988; Burns, 1990; Cluster, 1979; Haley, 1980; Teske, 1997) repeatedly show that people do not enter collective movements with fully fledged movement ideologies but that they develop their understanding of society and who they are within it as a consequence of participation. Crowds and collective action also lead to changes in the collective ideologies themselves. Indeed, as Eyerman and Jamison (1991) argue, the actions of social movements “are bearers of new ideas, and have often been the sources of scientific theories and of whole scientific fields, as well as new political and social identities” (p. 3). To take but one example, the rise of environmental science, of “green” sensibilities and “green” identities cannot be understood outside the actions of anti-nuclear activists, roads protestors, and other collective acts of opposition. Finally, crowd action can bring about the entire restructuring of society. Just over a decade ago, such a point may have required more justification when the role of the sans-culottes in the French Revolution of 1789 (Rude, 1959)

or of the July day crowds in the Bolshevik Revolution of 1917 were only historical memories. However, since the transformations in Eastern Europe – whether through the peaceful mass demonstrations of Czechoslovakia’s “velvet revolution,” the confrontational demonstrations in East Germany, or the violent clashes between Romanian crowds and state forces in Timisoara and elsewhere (cf. De Rudder, 1989/90; Garton Ash, 1990), the claim hardly needs to be labored.

Putting the two features together, it should be clear that, in simultaneously encompassing social determination and social change, crowd action reflects what is possibly the central paradox of human action. Characteristically, even when this paradox constitutes the focus of inquiry, these twin facets of the human condition are studied in relation to different phenomena. However, both come together in the crowd. It follows both that the crowd provides a privileged arena in which to study social (psychological) processes and also that any adequate explanation of the crowd must take us a long way toward understanding the general bases of human social behavior.

As well as delineating the extent of the challenge, even such a brief account as that provided above suggests the nature of the tools that are necessary to meet it. Thompson’s analysis suggests that the impact of structural and ideological factors upon action is achieved through actors’ collective understanding of their position as social subjects. Conversely, the work on social change indicates that it is as social subjects that people act collectively in ways that bring about transformations – including the way they understand their own position. In other words, the psychological processes that relate society to crowd action are those of identity. If we are to understand the nature of crowd action we therefore need a model of identity which explains both how society structures identity and how identity organizes action. Failure to do the former will lead to a desocialized crowd psychology, while failure to do the latter will lead to an abstracted social theory. In either case, it will be impossible to complete the cycle of crowd dynamics whereby social factors affect identity which organizes action which then reflects back upon society – and so on.

When one measures the actual performance of traditional crowd psychology against the size of this challenge the results are sorry indeed. The failure has not been to explain either social change or social determination at the expense of the other but to ignore – no, *to deny* – both. The theoretical underpinning of this denial, which has unfortunately been bequeathed to much of social psychology in general, is a theoretical model of the self which writes society out of the picture and which therefore cannot address how it either shapes or is shaped by actors and their actions. This neglect is hardly accidental. It reflects the concerns which led crowds to become a focus of explanation. In order to understand the deficits of classical crowd theory and how to transcend them it is necessary to start by considering the context in which crowd psychology was born.

2 Classic Models of the Crowd

2.1 Mass society and the birth of crowd theory

The rise of industrialization and the growth of cities in Europe and North America during the 19th century posed social as well as technological questions. Most notably, the

birth of mass society put the question of social control at the very top of the political and intellectual agenda. How would those who hitherto had been bound into the immediate hierarchies of village life continue to respect the existing social order once they were separated from their overlords as part of the urban masses? Mass society theory (cf. Giner, 1976), which theorized this dilemma, was ideological both in its diagnosis and its cure.

The diagnosis centered on the loss of traditional hierarchies – the church, the family, the army. This, it was proposed, led to a level of rootlessness and mindlessness, which made the mass prey to anarchic impulses, to passing fads, and to unscrupulous agitators. At the core of this argument is an ideological sleight of hand. Opposition to a particular social order from the perspective of alternative forms of social order is rendered as opposition to any social order from the perspective of no social order. Existing social relations are rendered inviolate by pathologizing the alternatives. The cure for those dangers posed by the mass was therefore to reimpose existing hierarchies rather than to acknowledge the problems which nourished alternative visions (Giner, 1976; Nye, 1975).

If the mass was a potential threat to “society,” then the crowd was that potential made actual. The crowd was the instrument through which anarchy would replace order. Nowhere did that threat seem more real than in the French Third Republic, the birthplace of crowd psychology. If the bourgeoisie of other industrializing countries feared for what masses and crowds might bring about, France had seen a brief but bloody victory of mass action against the state in the form of the Paris Commune. The republic which grew on the ashes of the Commune was weak and buffeted by forms of popular opposition on all sides: Clericalism, the populism of General Boulanger and, most particularly the rise of syndicalism, anarchism, and socialism. When the founders of crowd science wrote about crowds it was primarily such working-class action they had in mind. These founders were outsiders to the crowd, their presiding sentiment was that of fear and their principal purpose was less to understand than to repress the crowd. The first debate in crowd psychology was actually between two criminologists, Scipio Sighele and Gabriel Tarde, concerning how to determine criminal responsibility in the crowd and hence who to arrest (Sighele, 1892; Tarde, 1890, 1892, 1901).

Yet it would be one-sided to suggest that crowds incited only fear amongst the scholars who studied them and the class they represented. Crowds were also figures of fascination. Nye (1995) points out, in the late 19th century the French in particular and Europeans in general were obsessed with the notion that industrialization and urban life were draining off human energy, were leading to the fatigue of civilization and were thereby threatening the very survival of society. In this *fin de siècle* context the savage energy of crowds appeared as promise as well as threat. The failure of early crowd psychology was that it bemoaned the threat without being able to harness the promise. It was, perhaps, because he dealt with both sides of popular concern that the work of Gustave le Bon stood out from that of his contemporaries and that, of all of them, his work alone continues to have influence.

2.2 *Gustave Le Bon and the group mind tradition*

Le Bon's book on the crowd was first published in 1895. Moscovici (1981) has argued that it has not simply served as an explanation of crowd phenomena but has served to

create the mass politics of the 20th century. Certainly, Le Bon influenced a plethora of dictators and demagogues, most notoriously, Goebbels, Hitler, and Mussolini. This influence was not in spite of but rather an expression of Le Bon's intentions. He repeatedly urged contemporary establishment figures to employ his principles in order to use the power of the crowd for, rather than against, the state. His perspective matched the concerns of the age in their entirety: Fear and fascination in equal measure; denigration of the collective intellect, harnessing of collective energy. Both are equally represented in the core concept of submergence which, for Le Bon, marked the transition from individual psychology to crowd psychology. Simply by being part of the crowd, individuals lose all sense of self and all sense of responsibility. Yet, at the same time, they gain a sentiment of invincible power due to their numbers.

Once individual identity and the capability to control behavior disappears, crowd members become subject to contagion. That is, they are unable to resist any passing idea or, more particularly and because the intellect is all but obliterated, any passing emotion. This may even lead crowd members to sacrifice their personal interests – a further sign of irrationality. Contagion, however, is but an effect of suggestibility. That is, the ideas and emotions, which sweep unhindered through the crowd, derive primarily from the “racial unconscious” – an atavistic substrate which underlies our conscious personality and which is revealed when the conscious personality is swept away. Hence the primitivism of that unconscious is reflected in the character of crowd behavior. Crowd members, Le Bon asserts, have descended several rungs on the ladder of civilization. They are barbarians. But even here, where he seems at his most negative, the two-sidedness of Le Bon's perspective still comes through. For, as he then clarifies, this barbarian “possesses the spontaneity, the violence, the ferocity and also the enthusiasm of primitive beings” (p. 32). The majority of his crowd text is, in fact, essentially a primer on how to take advantage of the crowd mentality, how to manipulate crowds, and how to recruit their enthusiasms to one's own ends. In brief, Le Bon exhorts the would-be demagogue to direct the primitive mass by simplifying ideas, substituting affirmation and exaggeration for proof, and by repeating points over and again. It is important to acknowledge this stress on the power and the potential of crowds as a strength in Le Bon's work which has often been overlooked – and this is an issue that will recur several times in this chapter. None the less there are fundamental criticisms that can be made of his ideas on three different levels.

On a descriptive level, Le Bon's work is thoroughly decontextualized. The crowd is lifted both from the distal and the proximal settings in which it arises and acts. If Le Bon's concern was with the working-class crowds of late 19th-century France, no sense is given of the grievances and social conflicts which led angry demonstrators to assemble. Perhaps more strikingly still, Le Bon writes of crowd events as if crowds were acting in isolation, as if the police or army or company guards whom they confronted were absent, and as if the violent actions directed from one party to another were the random gyrations of the crowd alone. Such decontextualization leads to reification, to generalization and to pathologization. Behaviors that relate to context are seen as inherent attributes of the crowd, they are therefore assumed to arise everywhere irrespective of setting and, by obscuring the social bases of behavior, crowd action is rendered mindless and meaningless.

On a theoretical level, this divorce between crowds and social context is mirrored and underpinned by a desocialized conception of identity. That is, the self is conceptualized as a unique and sovereign construct which is the sole basis of controlled and rational action. Social context plays no part in determining the content of identity but merely serves to moderate its operation. Specifically, crowd contexts serve as the “off switch” for identity. Thus Le Bon’s crowd psychology breaks the link both between society and the self and also between the self and behavior. The former rupture means that no action, including crowd action, can either shape or be shaped by society. The latter rupture means that crowd action can have no shape at all, either social or otherwise. If the self is sole basis of control, then loss of self in the crowd means loss of control and emergent psychopathology.

On an ideological level, Le Bon’s ideas serve several functions. First, they act as a denial of voice. If crowds articulate grievances and alternative visions of society – if, in Martin Luther King’s resonant phrase, crowds are the voice of the oppressed – then Le Bonian psychology silences that voice by suggesting that there is nothing to hear. Crowd action by definition is pathological, it carries no meaning and has no sense. Secondly, this psychology serves as a denial of responsibility. One does not need to ask about the role of social injustices in leading crowds to gather or the role of state forces in creating conflict. Being outside the picture they are not even available for questioning. Violence, after all, lies in the very nature of the crowd. Thirdly, Le Bon’s model legitimates repression. Crowds, having no reason, cannot be reasoned with. The mob only responds to harsh words and harsh treatment. Like the mass society perspective from which it sprang, but with more elaboration and hence with more ideological precision, the Le Bonian position defends the status quo by dismissing any protests against it as instances of pathology (cf. Reicher, 1996b; Reicher & Potter, 1985).

McPhail (1991) points to such a political stance as the root of contemporary dissatisfaction with Le Bon. However, even if Le Bon’s name has fallen into some disrepute, his intellectual tradition continues to have a strong presence in contemporary psychology where, since the ideology is more implicit, the ideas can still exert their baleful influence. Most directly, the concept of submergence has explicitly been acknowledged as the root of contemporary theories of deindividuation (Cannavale, Scarr, & Pepitone, 1970) – although, as will be argued, deindividuation is a partial appropriation of submergence. The first study in this tradition, by Festinger, Pepitone, and Newcomb (1952) showed that the more anonymous male subjects felt the more they were prepared to express hostility toward their parents. This led to a number of studies which suggested that anonymity, particularly anonymity within a group, enhanced anti-social behavior (Cannavale et al., 1970; Singer, Brush, & Lublin, 1965). The first comprehensive attempt to theorize this relationship was made by Zimbardo (1969).

If Zimbardo echoes the extravagance of Le Bonian language in the title of his theoretical exposition – individuation reason and order versus deindividuation, impulse, and chaos – the exposition itself is rather more prosaic. A series of antecedent variables, notably anonymity, lead to the lowering of self-observation and self-evaluation and hence to the weakening of controls based on guilt, shame, fear, and commitment. The result of these mediating processes is lowered thresholds for exhibiting anti-social behavior. Under conditions of deindividuation, people are liable to act in violent, vandalistic, and destructive

ways. Quite quickly, however, it became clear that the model has both conceptual and empirical weaknesses. Conceptually, the model remains rather vague about the psychological mediators which lie between antecedents and behavioral outcomes. Certainly, little attempt was made to explore or provide evidence for these mediators. Empirically, it rapidly became clear that, if deindividuation produced behavioral changes it didn't necessarily lead to anti-social behavior. Indeed at times people may become more generous and more affectionate to others under deindividuated conditions (Diener, 1979; Gergen, Gergen, & Barton, 1973; Johnson & Downing, 1979). These twin issues led Diener (1977, 1980) to revise Zimbardo's model.

Diener employs Duval and Wicklund's notion of "objective self awareness" (Duval & Wicklund, 1972) as the psychological core of deindividuation. Once again a number of antecedents, most particularly perceptual immersion in a group, provide the first stage of the model. The consequence of these factors is to overload the information-processing capacities of the individual and hence to block the possibility of self-directed attention. This equates to a state of lowered objective self-awareness. The consequence of such a state is that individuals, being unable to retrieve internal or internalized standards, become increasingly influenced by environmental stimuli. They show little foresight, they lack inhibitions based on future punishment, their behavior changes with the stimuli to which they are exposed being alternatively prosocial or antisocial as a function of whether the stimuli are pro- or antisocial.

Prentice-Dunn and Rogers (1989) have added one further twist to the tale of deindividuation theory. They borrow a distinction between public self-awareness, which has to do with individuals' concerns about how others evaluate them, and private self-awareness, which approximates to the concept of objective self-awareness and has to do with monitoring the extent to which one's behavior matches one's internal standards (cf. Carver & Scheier, 1981; Fenigstein, Scheier, & Buss, 1975). When public self-awareness is blocked people ignore what others think and hence exhibit antinormative behaviors. When private self-awareness is blocked people lose access to their own internal standards and fall under external control. In effect, then, the model is a hybrid in which loss of public self-awareness approximates to Zimbardo's position and loss of private self-awareness approximates to Diener's. However, Prentice-Dunn and Rogers argue that being in a large group strips away both: Crowds leave us unrestrained either by social or personal standards.

Despite their differences, these models share three things in common. First of all, they consider that individuals have a single and personal identity or set of standards which is the condition for rational and controlled behavior. Secondly, they consider that any loss of access to these standards will lead to disinhibited or at least uncontrolled behavior. Thirdly, they propose that being part of a group – especially large and undifferentiated groups such as crowds – will lead to the occlusion of personal standards and hence to antisocial or asocial behavior. In these respects, deindividuation theory faithfully replicates the notions of loss of identity and loss of control which contribute to Le Bon's concept of submergence. However, as has been stressed, the concept of submergence is not just about loss of identity but also about the gain of a sense of power. It is by ignoring the latter that deindividuation theory becomes only a partial appropriation of the submergence concept. Indeed it could be argued that deindividuation theory discards the strengths and retains the weaknesses of Le Bon's argument.

By ignoring the issue of power, deindividuation models also ignore the potential of crowds and their transformatory possibilities. By retaining an individualistic notion of identity and of its loss in the crowd, deindividuation theory perpetuates the notion of collective action as generically incoherent and socially meaningful. This renders the approach incapable of accounting for the social patterning of those collective events for which the studies and the theory supposedly account. However, it also leads to a neglect of the social patterning which occurs within the studies themselves. A recent meta-analysis of the deindividuation literature (Postmes & Spears, 1998) demonstrates that, overall, participants are more likely to adhere to collective norms when they are supposedly deindividuated. All in all, the continued rupture between society self and action leads deindividuation theory to lack both internal and external validity.

2.3 Floyd Allport and the individualistic tradition

Sometimes influence is better measured by the way one provokes disagreement than through those who express direct agreement. Group mind theory may retain a presence in social psychology, however, it is undoubtedly a minority presence. Le Bon's more enduring impact has to do with Floyd Allport's rejection of the idea of a group mind and then with Allport's subsequent influence. If this seems paradoxical, the important thing to bear in mind is that, in being drawn into debate with Le Bon's position, Allport accepted the terms of that debate and hence these terms were allowed to predominate.

Such acceptance is easily obscured by the ferocity with which Allport condemned any notion of a group mind. He considered any reference to a mind that was separate from the psyche of individuals as a meaningless abstraction or even as "a babble of tongues" (Allport, 1933) and, in his seminal text on social psychology (Allport, 1924) he asserted that: "there is no psychology of groups which is not essentially and entirely a psychology of individuals" (p. 4). When it came to collective action, Allport declared, still more famously: "The individual in the crowd behaves just as he would behave alone only more so" (p. 295). This phrase has launched numerous theories and countless studies in group and crowd psychology. Ironically, however, while it fairly represents Allport's views on group processes in general, it is seriously misleading when it comes to his account of what happens in crowds themselves.

Allport's approach was based upon a combination of instinct and learning theory. He saw individuals as behaving on the basis of enduring response tendencies deriving from their conditioning histories. Conditioning, in turn, was built upon six fundamental pre-potent reflexes – including withdrawing from danger, the need for nutrition and for love. When energy is applied to the system, say through the stimulation provoked by others being present, there is an accentuation of the pre-existing tendencies. This is the concept of social facilitation. In general, then, collective behavior arises where there is a coming together of individuals who "owing to similarities of constitution, training, and common situations, are possessed of a similar character" (1924, p. 6). However, excitation is in geometric relation to the number of people present. So, as the group becomes a mass, so there comes a point at which the collective "boils over." At this point, learnt responses simply break down leaving the underlying instinctual apparatus. In particular, masses (or

crowds) are governed by the instinct of struggle – which is the tendency to destroy anything that stands in the way of the satisfaction of other instincts.

When one outlines what Allport actually wrote about crowd psychology as opposed to what has been assumed from a single quotation, the similarities with Le Bon are obvious. Crowd members lose their unique and idiosyncratic identities and behave in terms of a primitive animal substrate – the difference being that Allport's substrate is more biological and less mystical. Like Le Bon, Allport's crowd psychology ruptures both the link between society and identity and that between identity and action. His more general group psychology may restore the latter link, but it still rejects the former. That is to say, groups might accentuate identity but it is an asocial identity. The shape of crowd action is determined by character structures not by culture or by ideology. It therefore remains impossible to understand the social shape of collective action let alone the way it shapes society. Therefore, the tradition which derives from Allport may (unwittingly) break with his (and Le Bon's) ideas of identity loss. However, it still retains a desocialized conception of identity which blocks the possibility of understanding the psychological mediation between society and collective action.

In talking of the Allportian tradition one is referring to a more diffuse sense of influences than in the case of Le Bon. Rather than a single model with its roots explicitly acknowledged, there are a number of approaches whose lineage from Allport is a matter of explaining collective action in terms of pre-existing individual tendencies. The most obvious application of such an individualistic meta-theory to crowds is to argue that action is explicable in terms of the individual traits and attributes of participants. Crowd members who take part in violent action or action against the social order might be expected to have violent or antisocial personalities – or, at the very least, to be under-socialized or marginal to society. As the official U.S. Riot Commission report of 1968 acknowledged, the most prevalent view was that “rioters were criminal types, overactive social deviants, or riff-raff – recent migrants, members of an uneducated underclass – alienated from responsible Negroes and without broad social or political concerns” (pp. 125–126).

The evidence disconfirms such a view. To start with, riots are less likely where populations are more marginal or more transient. Indeed, in total contrast to the fears of mass society theorists, an analysis of European cities during the 19th century shows that greater growth and social disorganization were related to lower levels of riot (C. Tilly, 1969, R. Tilly, 1970; Tilly, Tilly, & Tilly, 1975). Riots tended to happen in towns and in areas that were stable and had well-established social networks. Feagin and Hahn (1973) provide similar evidence for the American urban revolts of the 1960s.

Next, there are considerable data that show migrants were under-represented and long-standing residents were over-represented in riot events (Caplan & Paige, 1968; C. Tilly, 1968). This resonates with what, by now, is a copious literature on crowd participants which, whether in the case of Roman mobs (Brunt, 1966), the Sacheverell rioters of 1710 (Holmes, 1976), the Gordon rioters of 1780 (Rude, 1970; Stephenson, 1979), the Wilkite mobs (Rude, 1970), the crowds of the French Revolution (Rude, 1959), the Ludites (Hobsbawm, 1968), the “Captain Swing” rioters (Hobsbawm & Rude, 1969), and many more besides, including the American rioters of the 1960s (Caplan & Paige, 1968; Marx, 1967), shows that rioters were typically members of cohesive groups from the more

“respectable” strata of society. The 1968 U.S. Riot Commission draws an explicit portrait of the typical ghetto rioter: “He was born in the state and was a life-long resident of the city in which the riot took place. . . he was somewhat better educated than the average inner-city Negro. . . he is substantially better informed about politics than Negroes who were not involved in the riots” (pp. 128–129).

Finally, while there is ample evidence, especially from the American revolts of the 1960s, that participants differed from non-participants in terms of ideology and identification – they associated more in terms of Black pride and Black power and accepted an ideology of resistance to oppression (Caplan, 1970; Caplan & Paige, 1968; Forward & Williams, 1970; Marx, 1967; Tomlinson, 1970) – there has been precious little success in finding any individual attributes which reliably predict riot participation (Foster & Long, 1970; Stark, 1972; Turner & Killian, 1987). McPhail (1971) surveyed 288 attempts to associate such attributes with measures of participation in riots between 1965 and 1969, and in only two cases was there a strong relationship. The riff-raff view, whatever guise it takes, is manifestly unsupported.

A rather different attempt to explain crowds in individualistic terms can be found in the form of game theory. The classic statement of this approach is to be found in Olson’s (1965) text, *The Logic of Collective Action*. He argued that crowd members act as classic utility maximizers, seeking, as normal, to increase benefits over costs to the individual self but under conditions of altered contingencies. The most consistent champion of this approach has been Richard Berk (1972a, 1972b, 1974a, 1974b). His “rational calculus” model of crowd action involved five steps. First crowd members seek information, secondly they use this information to predict possible events, thirdly they list their behavioral options, fourthly they establish a preference order for the probable outcomes of alternative actions, and fifthly they then decide on a course of action which will minimize costs and maximize rewards. In sum, the probability of an act is a joint function of payoff and perceived probability of support (Berk, 1974b). So, where one perceives mass support, one will be more likely to pursue valued ends which one previously eschewed for fear of resistance or punishment by an outgroup (see also Brown, 1985). The effect of the crowd, therefore, is to transform behavior while maintaining the individual standards and tendencies on which behavior is based.

Berk himself recognizes that both his causal concepts, anticipated payoff and anticipated support, are fraught with problems. Being almost impossible to specify in advance: “analyses of their impact risk circularity” (1974b, p. 365). As a result of this, game theoretical approaches to crowd behavior have generated little research and the area has fallen into disuse. While Berk himself did provide some detailed studies of crowd events (1972b, 1974a), as McPhail (1991) notes, their subtlety serves to expose the limitations and not to reveal the power of game theory. These limitations can be traced directly to the concept of self-embodied in the core notion of human beings as “utility maximizers.”

This idea is individualistic in two senses. On the one hand it is presupposed that the subject of utility is the individual actor. The idea that people might seek to accrue benefits for collective units – one’s country, one’s comrades, even one’s family – is not considered. On the other hand the criterion of utility lies in the set priorities of the individual actor – or else it is presupposed that certain things, notably monetary reward, count as utilities for everyone. The possibility that social values and norms might determine util-

ities, or that the values and norms on which people act, and hence what counts as a utility, might change in collective contexts, is equally ruled out of court. Hence we are back firmly with the problem with which we began. Any model which links behavior to fixed individual tendencies must suppose a commonality of tendencies among crowd members (a proposition which is confounded by the evidence) and must deny the social character of crowd action. These errors of commission and omission are insuperable. More generally still, the view of self which isolates the psychological mechanisms of behavioral control from societal structuration – a view shared by Le Bon and by Allport and by the descendants of both – remains as much of a barrier to the understanding of crowd action as it did a century ago.

3 Models of Crowd Sociality

3.1 *Emergent norm theory*

Given the divorce between individual and society in psychological social psychology it is unsurprising that sociology began to develop its own social psychology and that perhaps the best-known approach within this tradition is symbolic interactionism, which is concerned with the creation of meaning within social interactions. It is equally unsurprising that the first attempt to explain the social shape of crowd action should involve the application of the approach by sociologists. Emergent norm theory (Turner & Killian, 1987) is an attempt to combine symbolic interactionism with psychological research on the formation of group norms (Asch, 1952; Sherif, 1936; Sherif & Harvey, 1952) in order to account for the social coherence of collective action. The approach seeks to reconcile the claim that crowd action is normal rather than pathological or irrational with the observation that it is not guided by traditional norms but rather tends to transcend, bypass, or even subvert established institutional patterns. As the name of the theory suggests, this reconciliation is effected through the idea that collective behavior takes place under the governance of emergent norms. Understanding collective behavior therefore depends upon explicating the process of norm formation.

For Turner and Killian, collective behavior often takes place in situations that are unusual such that “redefining the situation, making sense of confusion, is a central activity” (1987, p. 26). They draw on Sherif (Sherif, 1936; Sherif & Harvey, 1952) to argue that uncertainty precipitates a search for norms and upon Asch (1952) to argue that the perception of unanimity is central to the validation of norms. Norms are effective to the extent that they are seen as a property of the group rather than a position taken by particular individuals within the group. However, their distinctive contribution concerns the gap in between: How do new norms emerge and gain assent?

Turner and Killian argue that it is an illusion to suppose that crowds are homogenous. Rather, crowds are characterized: “by differential expression, with some people expressing what they are feeling while others do not” (1987, p. 26). Before crowd action takes place there is characteristically an extended period of “milling” during which people engage with others, proffering their own accounts of reality and listening to those of others. Certain individuals are more prominent than others in this process. These so-

called “keynoters” help to resolve the ambivalence of the majority by proposing definite action tersely, forcibly, and with no uncertainty. As more people resolve or suppress their ambivalence in favor of the stance of a given keynoter so that proposal is expressed more widely to the exclusion of other proposals. In this way the illusion of unanimity grows and the illusion becomes a self-fulfilling prophecy.

From close to, this provides a compelling picture of crowd action. As is demonstrated by the studies which Turner and Killian cite, and by subsequent studies alike (e.g. Reicher, 1984a; Reicher, 1996b; Stott & Reicher, 1998), the violent and dramatic moments of crowd events may attract all the attention but they almost always occur after a prolonged period of “hanging around” during which crowd members seek to make sense of what is happening. To remove the final moments from the extended temporal context is as serious an act of decontextualization as to remove crowd action from the extended intergroup context. Equally, the notion of crowd members debating how to make sense of novel social situations and then acting upon the resultant collective understandings fits with empirical studies of crowd events (Caplan & Paige, 1968; Fogelson, 1971; Oberschall, 1968; Reddy, 1977; Reicher, 1984a; Smith, 1980; Thompson, 1971).

In these regards, emergent norm theory marks a crucial break with classic crowd psychology and an important step toward understanding the sociality of crowd action. It restores the link between the self-understandings of the subject and actions in the crowd. It also emphasizes the inherent sociality of these understandings. However, this sociality relates almost exclusively to the micro-social interactions among individual crowd members. It comes at the expense of understanding the links between what goes on between crowd members and broader aspects of social reality. This divorce between micro and macro levels of analysis underlies two important limitations to the theory.

First of all, such is that stress on the deliberative process that it becomes very difficult to explain how crowd unity can be achieved without a prolonged period of milling and therefore how crowds could remain united but still shift rapidly in relation to changing circumstances – a problem acknowledged even by adherents to emergent norm theory (e.g. Wright, 1978). It is as if norms must be constructed from scratch through laborious interindividual interactions each time a decision is needed. The lack of any scaffolding to the process of norm creation also makes it hard to explain how crowd norms and crowd behavior reflect broad cultural and ideological understandings – this is the second limitation. When explaining why the suggestions of particular keynoters should prevail over others, Turner and Killian invoke such factors as the status of speakers, their primacy in speaking, their terseness of expression, and the existence of latent support for their position. Without specification, the last suggestion is in danger of slipping into tautology. What is left is a series of factors relating to the attributes of the keynoter. Taken to its extreme, this results in a position whereby crowds act in terms of group norms but these group norms are a function of the individual leaders. Hence emergent norm theory becomes an elitist form of the individualist tradition.

This is certainly not what Turner and Killian intend. However, these problems are inevitable unless a way is found to relate the processes of sense-making in the immediate social context to the broader ideological context. To put it otherwise, emergent norm theory extends the analysis of the processes that shape crowd action from an intraindividual to an interindividual level. However, the subject remains isolated from societal def-

inition and hence the relations of determination between larger-scale social factors and the actions which take place within and between groups remain opaque.

3.2 *A social identity model of crowd action*

For the purposes of explaining crowd action, perhaps the most significant aspect of social identity theory and its development through self-categorization theory (Tajfel, 1978, 1981; Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994; see Hogg, this volume, chapter 3) is the concept of social identity itself. To start with, the social identity tradition assumes identity to be multiple and to constitute a complex system rather than being unitary. Most notably, a distinction has been made between personal identity, which refers to the unique characteristics of the individual, and social identity, which refers to an individual's self-understanding as a member of a social category (Tajfel, 1978; Turner & Giles, 1981). However, these terms may be misleading and it is important to stress that all identities are social in the sense of defining the person in terms of social relations. It is just that these relations are defined at different levels of abstraction. Personal identity defines how I, as an individual, am unique compared to other individuals while social identity defines how we, as members of one social category are unique compared to members of other social categories (Turner, 1991, 1999; Turner et al., 1987). However, the definition of social categories is inescapably bound up with ideological traditions. What it means to be a Catholic, a socialist, a Scot, or whatever cannot be understood outside of such traditions.

It is equally important to stress that all identities are personal in the sense that they define the individual and are deeply important to the individual. Social identities at times may be even more important than individual survival. It is almost a truism to note that people will not only kill but die for their various faiths – national and political as well as religious. They may even glory in so doing; *dulce et decorum est pro patria mori*. The most important point, however, is to stress how social identity brings the individual and the societal together. It defines individual category members in ideological terms. It thereby provides a good starting point for understanding how the patterns of collective action may be ideologically coherent. It remains to specify in more detail how socio-ideological factors relate to the micro-processes of influence and interaction in the crowd through the mediation of social identity.

According to Turner (1982, 1991; Turner et al., 1987) self-categorization constitutes the psychological basis for group behavior. On defining ourselves as category members we participate in a process of self-stereotyping. That is, we seek to determine the relevance of category identity for action in context and we conform accordingly. We expect fellow group members to do likewise and therefore we also expect to agree with them on matters pertaining to our mutual social identity. How then do we determine what our category implies for how we should act in any given situation? In most of our social lives our actions will be routinized and norms will be clearly specified. Where they are not, there may be mechanisms of debate or else hierarchies of command through which norms may be specified. Such deliberative processes whereby appropriate behavior is derived

from consideration of general category identity corresponds to what has been termed the deductive aspect of categorization (Turner, 1982). However, crowd situations are typically exceptional rather than routine and they offer little possibility of deliberation. Crowds are usually unstructured groups with no formal lines of command and the practical possibility of sitting down to agree on norms in the midst of a riot is rather limited. In this situation, the inductive aspect of categorization may take precedence. That is, group norms are inferred from the comments and actions of those seen as typical group members (Reicher, 1982).

In one sense, this account is similar to that of emergent norm theory: Crowd members are faced with the task of making sense of ambiguous situations and look to noteworthy others in order to do so. However, the key difference is that, from a social identity perspective, crowd members approach that task as members of a specific category. Being part of a psychological crowd (as opposed to a set of people who simply happen to be co-present) does not entail a loss of identity but a shift to the relevant social identity. Correspondingly it entails neither a loss of control nor a simple accentuation of pre-potent tendencies, but rather a shift to categorical bases of behavioral control. So, crowd members do not simply ask “what is appropriate for us in this context?” but “what is appropriate for us *as members of this category* in this context?” They won’t follow anything but only those suggestions that can be seen as appropriate in terms of category identity. They won’t follow anyone but only those seen as category members. More generally, crowd members seek to construe a contextual identity by reference to and within the limits set by the superordinate categorical identity. This relationship, and the fact that identity can be inferred from the acts of ingroup members, explains the rapidity with which consensus can arise. Insofar as social identities are ideologically defined, this (unlike emergent norm theory) also explains how the broad limits of crowd action make sense in terms of societal ideologies (Reicher, 1982, 1987).

Evidence to support the social identity model of crowd action comes from both experimental and field studies. The experimental studies address the deindividuation paradigm. Reicher (1984a) demonstrated that when individuals are already in a group then anonymity in the sense of loss of individuating cues accentuates the predominance of cues to group membership and hence of category salience. This leads to an accentuation of group normative behavior. Conversely, where people start off isolated from each other as individuals, then anonymity accentuates that isolation, weakens group salience, and weakens normative behavior. These findings have been replicated and extended in a number of different settings with a variety of groups and using different manipulations of anonymity (Lea & Spears, 1991; Postmes, Spears & Lea, 1998, 1999; Reicher & Levine, 1994a, b; Reicher, Levine & Gordijn, 1998; Reicher, Spears & Postmes, 1995; Spears & Lea, 1992, 1994; Spears, Lea & Lee, 1990). What is more, as I have already noted, a recent meta-analysis of all the major studies over the last 30 years (Postmes & Spears, 1998) indicates that, when supposedly “deindividuated,” subjects tend to act in terms of the norms that are appropriate to the specific groups that were involved.

The first of the field studies dealt with the St. Paul’s “riot” of April 1980 – the precursor to a wave of “inner city riots” which affected most major British cities during the 1980s. The events stemmed from a police raid on a Black-owned café in the St. Paul’s area of Bristol and led to five hours of sustained conflict followed by attacks against prop-

erty. Despite the dominance of irrationalist accounts by politicians and in the media (Reicher, 1984a; Reicher & Potter, 1985), a systematic analysis of the events revealed three elements that went together to make up a very different picture. First of all, there were clear limits to crowd action. In the earlier phase of conflict, only the police constituted targets of attacks. In the later phase, after the police had left, only financial institutions and shops owned by outsiders were subjected to collective attack and looting. There were also geographical limits to the action. The rioters chased the police to the boundaries and then stayed put, lighting symbolic bonfires at the limits and directing traffic back in.

Secondly, participants described themselves and others in terms of social identities. On the one hand, they stressed their collective identity as members of a St. Paul's community. Likewise, they described their relations to others on a categorical level: whether people were fellow St. Paul's inhabitants, whether they were outsiders, or whether they were members of categories specifically seen as antagonistic to St. Paul's. They also stressed that part of the pleasure of the events was that people recognized each other and were recognized as from St. Paul's. That is, they may have been anonymous to the police outgroup but they were certainly not anonymous to fellow ingroup members.

Thirdly, there was a clear match between crowd action and the self-definition of crowd members. While only a minority of crowd members were Black, St. Paul's identity was defined in terms of Black experience: To be from St. Paul's was to be oppressed by institutions such as the police, to be exploited by financial institutions, and to be in poverty within an affluent society. Accordingly, those people who were attacked were predominantly members of the police. It was the financial institutions that were physically attacked and the symbols of luxury that were destroyed. Moreover, the geographical character of the identity is reflected in the geographical limits to all the attacks.

This relationship between identity and collective action was apparent not only in terms of outcome but also in terms of process. That is, the actions of individuals in the crowd were extremely varied, however, the importance of social identity was displayed in the ways in which individual actions did or did not generalize. When a stone was thrown at the police it led to a hail of stones. When a stone was thrown at a bus crowd members not only failed to join in but actively dissuaded the perpetrator. Hence it was through the limits of what became collective that the operation of social identity was apparent. No doubt, under the cover of crowd action, individuals did enter St. Paul's to loot for personal gain. Hence the simple record of damage and theft reveals a muddled pattern. But considering events in progress and looking at how consensus emerges and shifts, then the pattern is much clearer.

Such evidence, and further evidence concerning a number of different crowd events in different contexts (Drury & Reicher, 1999, in press; Reicher, 1996b; Stott, 1996; Stott & Drury, 1999; Stott & Reicher, 1998) serves as powerful support for a social identity perspective and, more particularly, for the notion that crowd members act in terms of social identity (as opposed to losing identity) which then guides influence processes among crowd members (as opposed to influence being unguided and unlimited). However, even within the St. Paul's study, the evidence does more than suggest that crowds are simply like other groups in that social identity forms the basis for collective action. Firstly, it indicates that crowds give rise to a sense of power which

allows members to express their identity even in the face of outgroup opposition. Indeed it suggests that crowds may be unique in allowing people to give full expression to their identities.

This claim gains further backing from more recent studies in the deindividuation paradigm which show that, when people in groups are anonymous to outgroup members and identifiable to fellow ingroup members (such that they are able to coordinate and to express mutual support) they are more likely to express those aspects of ingroup identity that are punishable by the outgroup (Reicher & Levine, 1994a, b; Reicher, Levine, & Gordijn, 1998; Reicher, Spears, & Postmes, 1995). Such analyses reintroduce the concept of power to crowd psychology. However, in contrast to the Le Bonian tradition, power is not regarded as a result of identity loss and is not seen as leading to mayhem in crowd events. Rather, power operates in relation to the expression of identity and therefore lends a clearer social form to crowd action.

Thus far, the social identity model fares relatively well in explaining crowd action. It provides a means of linking society to identity and identity to action in such a way as to explain the patterning of crowd events. It acknowledges that people in crowds have the potential to undertake and carry through actions in ways that would normally be impossible. The energy of the crowd invests it with a transformatory potential. However, the evidence points to a second type of transformation with which the model copes less well. That is, in St. Paul's as elsewhere, events did not simply allow crowds to enact repressed aspects of an existing identity. They also led to a change of identity. After the "riots," those who had been involved expressed a new-found confidence in resisting and making claims of the police and of other authorities. They expressed a new sense of pride in themselves and a new sense of their potential. In a model where the emphasis is on the way in which crowd action is a consequence of social identity, how can crowd action lead to social and psychological change? In more general terms, the social identity model may account for the social determination of crowd action, but it is less successful in explaining social and psychological change. In order to overcome this impasse it is necessary to address the relationship between social categorization and social reality.

This is a central issue for self-categorization theorists. In contrast to those who assert that social categorization and group-level perception are a form of functional error by which a human cognitive system of limited processing capacity seeks to simplify an overly complex social world, self-categorization theorists assert that categorization and stereotyping reflect the nature of social reality: We see people in terms of group memberships to the extent that people are organized in terms of group memberships in the world (Oakes, Haslam, & Turner, 1994) even though this may increase the load on our cognitive systems (Nolan, Haslam, Spears, & Oakes, 1999; Spears & Haslam, 1997; Spears, Haslam, & Jansen, 1999). However, while self-categorization theory raises the question of how psychological categories relate to the organization of the social world, it is important to see this as a two-way relationship. To date, the stress has been on the way in which social context defines social categories and hence social action. It is equally important to examine how social categorization can be used to organize collective action and hence affect social context. This aspect of the relationship is important in itself if we are to understand crowd phenomena – particularly the mobilization and direction of mass action. However, it is also important as a precursor to understanding the interplay

between determination and change and hence how crowd events unfold. In the next two sections, these issues will be dealt with in turn.

3.3 Categorization and mass mobilization

In technical terms, self-categorization theory proposes that the way we group people in the world (category salience) is a function of accessibility and perceiver readiness. Perceiver readiness has to do with the extent to which certain categories are available within our cognitive system and the extent to which we are accustomed to using them (Turner et al., 1994). Most work, however, has focused on “fit,” which has to do with the extent to which the categories fit the distribution of stimuli in the real world. On the one hand those categories are chosen which minimize the ratio of intragroup differences to intergroup differences – comparative fit. On the other hand, categories are chosen such that the nature of differences between stimuli matches normative expectations about group differences – normative fit (Oakes et al., 1994; Oakes & Turner, 1986; Oakes, Turner, & Haslam, 1991). The fit principle, specifically that of comparative fit, is also used to explain the content of category identities. That is, the prototypical group position toward which group members will converge is that position which minimizes intragroup differences compared to intergroup differences. It will therefore vary as a function of which outgroup is present in the specific comparative context (Haslam & Turner, 1992, 1995; Haslam, Turner, Oakes, McGarty, & Hayes, 1992).

While the fit principle assures the link between reality and group process, it should not be thought that this means that social perception and action are purely the result of intrapsychic cognitive computations. In recent formulations (Haslam, 1997; Haslam, Turner, Oakes, McGarty, & Reynolds, 1998) it has been stressed that the adoption of a common category membership frames a process of discussion and debate. The importance of categorization is that it leads group members to expect agreement around the ingroup stereotype and hence to engage in an active search for consensus. None the less, even if a degree of debate is allowed, there is a danger that the emphasis on fit may lead to the impression that in any specific situation, the categories will also be specified and that there will be an irresistible impetus toward a single and consensual definition of the category stereotype. As indicated above, the model may be seen as providing a one-sided relationship between context and self, whereby the context is taken as given and as determining the self – and hence social action. If stasis derives from a rigid notion of context as fixed external reality, balance depends upon problematizing this notion.

Reicher and Hopkins (1996a, 1996b) have argued that, while experimenters may be able to impose a particular frame upon subjects, to specify the positions of those within the frame and to do so in advance of any action, these conditions are far from universal outside the laboratory. Frequently in our social worlds, especially those worlds inhabited by crowds and social movements, the nature of context is not clear and may provide a focus of controversy. So, while categories may indeed be linked to context, one cannot always presuppose the context and read off the categories. It is also true that people may contest the nature of context and therefore dispute the nature of categories. Within a specific situation people may differ over what categories are relevant, over the content of cat-

egorical stereotypes and even over who is prototypical of the groups (Herrera & Reicher, 1998; Reicher & Hopkins, 1996a, 1996b; Reicher & Sani, 1998; Sani & Reicher, 1998, 1999).

Taking the argument a stage further, these arguments about categorization are not simply attempts to *understand* context, but an attempt to *create* context. That is, if self-categorization theory is right in suggesting that the character of collective action depends upon the nature of self-categories, then it is through defining these categories that one is able to shape social behavior at any scale from the small group right up to societal mobilizations. This being the case, then one might expect those concerned with mass mobilization – such as politicians and social movement activists – to be “entrepreneurs of identity” (cf. Besson, 1990). A number of studies have supported this supposition, showing that speakers seek, firstly, to define the boundaries of social categories such that all those they seek to mobilize fall within a common category; secondly, to define the content of category stereotypes such that the position advocated by the speaker is consonant with ingroup identity; and, thirdly, to define the category prototype such that they themselves or the organization they represent exemplifies the category and is therefore able to outline appropriate situational norms (Hopkins & Reicher, 1997a, 1997b; Reicher & Hopkins, 1996a, 1996b; Reicher, Hopkins, & Condor, 1997a, 1997b).

In more familiar terms, this is a model of mass leadership (or, in the terms of emergent norm theory, of keynoter effectiveness). Successful leaders are those who are able to define themselves in the terms of the category definition and who define their proposals as the enactment of the relevant social identity. In one sense, this is consistent with recent studies which show that, when categories are salient, leadership effectiveness is higher for those who match the category prototype (Hains, Hogg, & Duck, 1997; Hogg, 1996) and that, as comparative context changes and with it the category prototype, so different leaders come to the fore (Haslam, 1999). However, in line with the broader meta-theory, these studies tend to presuppose the definition of identity and leadership is something conferred by objective coincidence between personal and group positions. This portrays the leader as essentially passive and helpless in the face of circumstance. The argument being advanced here rejects the notion of identity as given, it makes the leaders much more active in construing both the nature of group identity and their own natures or else their proposals so as to achieve a consonance between the two. It also demands that we give independent weight to the discursive ploys through which speakers seek to make their constructions seem factual and self-evident (cf. Edwards, 1997; Potter, 1996). All in all, leadership is not simply a reflection of existing social realities, but also a matter of creating future realities through the ways in which self-categories are constructed and people are mobilized.

We now have a path from self-categorization to social context which can be added to that from context to categorization. However, this statement needs elaboration or else it threatens to be seriously misleading. If self-categorization is seen as a direct determinant of social reality, then there would be no limits upon the effectiveness of leaders in recreating the world as they wish beyond their ingenuity in offering appropriate constructions (what Billig, 1987, terms “witcraft”). That would be simply to use the one path to supplant the other rather than advancing our understanding of the two-way relationship

between categorization and social reality in such a way as to account for the way in which collective action embodies both social determination *and* social change.

However self-categorization does not create reality directly. Rather it organizes collective action which is aimed at creating particular forms of reality. But, of course, such actions may not proceed unhindered, particularly in crowd contexts. As was stressed earlier, crowd events are typically intergroup encounters, and the actions of one group may be resisted by the actions of the other. If identity is about the organization of action, then one might expect that such outgroup resistance to ingroup actions will frame the effectiveness of different identity constructions. Indeed, one can go further and argue that, in the case of crowd events, the outgroup does not just provide resistance to action, but provides the very ground on which it occurs. That is, the physical context within which crowd members act and which they seek to change, is constituted by the presence and actions of the other. The relationship between self-categorization and context is therefore formed out of the intentions for future action by one group and the outcomes of past action by the other group. This relationship, and hence the balance between social determination and social change, is to be understood by analyzing the unfolding dynamics between groups. The elaborated social identity model of crowds is designed to enable just such an analysis.

3.4 An elaborated social identity model (ESIM) of crowds

In order to address the dynamic interplay between groups that constitutes crowd events, ESIM involves a reappraisal of some of the basic terms of the social identity tradition. The first (as already indicated) is the notion of context, which needs to be understood as constituted for one group by the actions of the other (and vice versa). The second is the notion of identity itself. Whereas self-categorization theory, through the concept of comparative fit, proposes that the process of identity definition depends upon the relationship between categories in context, the content of social identity is generally conceptualized (or at least operationalized) in terms of trait lists (e.g. Haslam & Turner, 1992, 1995; Oakes, 1987; Oakes & Turner, 1990).

By contrast ESIM regards social identity as a model of self in social relations, along with the actions that are proper and possible given such a social position. Thus, to be British is to define oneself in a world of nations or to be working class is to define a world in terms of class relations, and class “characteristics” flow from the possibilities that flow from occupying a disempowered position within this world. Such a conception is buttressed by two types of empirical evidence. The first is that when people talk of their identity they tend to do so in the terms of this definition (Reicher, 1984a, 1987). The second is that use of traits without reference to the relational context in which they gain meaning may be highly misleading (Hopkins & Reicher, 1997a, 1997b). To describe the English as “freedom loving” has entirely different connotations as a function of whether it is used in the context of fighting the Nazis or opposing a Pakistani family moving in next door (cf. Schwarz, 1982).

This conception of social identity leads to the question of how we can change identity by acting on identity to be reposed in the following terms: How can action in terms of one’s understanding of one’s social position lead to a change in that social position

and hence a change in one's self-understanding? Social psychology in general, and the social identity tradition in particular, often presuppose that outcomes flow directly from intentions and therefore overlooks any disjunction between the two. However, by invoking the intergroup character of crowd events once more, this disjunction becomes not only explicable but also even mundane. As Shotter (1989) notes, once action is placed in an interactional context, it is always liable to result in unintended consequences. In crowd events, people may act on the basis of one set of understandings but their acts may be interpreted in very different ways by the outgroup. Where the outgroup has the power to privilege its interpretations this may lead actors into unimagined positions.

In a number of studies involving different types of crowd event, including football matches (Stott & Reicher, 1998), student demonstrations (Reicher, 1996), tax protests (Drury & Reicher, 1999), and environmental protests (Drury & Reicher, in press), a common dynamic has been found to underlie processes of change. Each of these events had different psychological crowds with different identities and different intentions co-existing within the physical crowd (or aggregate). Such change as occurred was among "moderate" elements of the crowd who understood themselves as "responsible citizens" acting in socially legitimate ways and who understood those policing them as neutral guarantors of the social order. However, in coming together within a single aggregate, these actors were seen by police as an indistinguishable part of an illegitimate crowd which constituted a danger to the social order. Moreover, given their technological and communicational resources, the police were able to impose this understanding upon the crowd by stopping all of them from continuing in their activities – whether they were marching to a football match, lobbying parliament about student funding, registering opposition to a new tax, or registering opposition to the destruction of green areas in order to construct a road.

As a consequence of being impeded in carrying out such "legitimate" activities and in response to being treated as dangerous and oppositional by the police, "moderate" crowd members in turn came to see the police as an illegitimate opposition. Furthermore, having experienced a common fate at the hands of the police, previously disparate crowd members came to see themselves as part of a common category even with more radical elements from whom they had previously felt distanced. This extension of the ingroup category, along with the solidarity that was both expected and obtained among ingroup members, led to a sense of empowerment and a willingness to challenge the police. Such challenges confirmed the initial police perception and, in turn, led them to increase the level of constraint they sought to impose on crowd members. In this way a process of escalation was initiated and sustained.

These interactions led, both during and subsequent to the actual events, to a series of changes: In subjects' sense of themselves (from "moderate" to "oppositional"), to a change in their sense of identification with others (including other oppositional groups within a common identity), to a change in their sense of empowerment and potential (as a function of being part of a larger movement), and even to a change in their very reasons for collective action (from the specific aim of the original protest to the need to challenge illegitimate authority and hence the intrinsic value of sustaining protest).

On a theoretical level, these examples show clearly how categorization and context interrelate within intergroup dynamics. The category definitions deployed by the police led to their physical deployment against the crowd and constituted the context in which

the crowd acted. This led to recategorizations by the crowd and common action against the police – thus constituting a new context within which the police in their turn reacted. Not only does categorization for the one group shape the actions which become the context for the other, but in the process the very categories and the relations between them are altered. It can also be seen that the process of change results from certain crowd members acting on one understanding of social relations and this leading to them being placed in a new set of social relations as a consequence of the way their presence and their actions were understood and reacted to by an outgroup. Hence, in line with the reconceptualizations offered above, it can be seen how acting on identity led to a change of identity due to the dynamics that ensued from a mismatch between how certain crowd members saw their social location and how the police (re)located them.

It should be stressed that this model is not meant to suggest that change is a feature of all crowds or even of all within particular crowds. Indeed the particular conditions which initiate the process of change – where there is an asymmetry between the understandings of different parties and where one group has the power to enact its understanding over the other – may be relatively rare. Many events may be relatively routinized and the understandings which each has of the other will match. What is more, where change does occur it needn't always be in the direction of radicalization and empowerment. It could be that one's view of an outgroup and of one's social position is moderated when they facilitate actions when they were expected to impede them.

Clearly, the particular evidence of change obtained in the studies mentioned above results from the particular configuration of social relations between groups which obtained within them. ESIM is not intended to substitute for such situated social analysis, but rather to provide a psychological model which operates within ideological and structural settings. The aim is to explain what aspects of these settings are crucial and how they articulate with crowd psychology in order to produce different outcomes. The role of crowds in affirming and consolidating a social order due to the symmetry of understandings between the different parties to an event is every bit as important and requires just as much study as the processes of conflict and change that may be initiated by asymmetric perspectives.

4 Conclusion

At the outset, the aim of this chapter was defined as seeking to re-place crowd psychology at the center of social scientific and sociological thought. The grounds for doing so were that crowd events encompass both social determination and social change and therefore an adequate crowd psychology must necessarily address the full complexity of human sociality and the inherently two-sided nature of the relationship between the individual and society. Throughout the chapter, attempts both to ignore such questions and also to answer them have been documented – attempts which have revolved around two inter-related themes: The decontextualization or contextualization of crowd action; the use of desocialized or socialized conceptions of self and identity.

Having reached the end of the chapter, it would clearly be both presumptuous to suggest that we now have a comprehensive understanding of crowd phenomena. Indeed

certain key phenomena are all but missing from the contemporary literature. Most obviously, the attempt to combat dominant irrationalist accounts has led to a focus on crowd cognitions and understandings while emotions and the phenomenology of crowd participation has been largely ignored. It is time to revisit these aspects of the crowd, but in doing so, we should not repeat the classic mistake of counterposing intellect and emotion and seeing the latter as usurping the former. Just as it was argued that empowerment operates in relation to identity, so progress depends on investigating how emotion relates to the self-understandings of crowd members. There may be joy in being part of a crowd, in being fully recognized as a group member, and being able fully to express one's identity; there may be anger at outgroup attempts to impede such expression; however, what counts as expression and its denial is a function of the precise definition of identity at any moment in time. While we may not understand the crowd in full, we do at least have a framework within which to address both the well-visited and the neglected corners of the field.

This framework involves reconceptualizing core concepts such as "context," "social identity," and "intentionality." Above all, it requires us to look at collective phenomena as interactive and as developing over time. If such a framework is necessary to the understanding of crowds, it may also have more general applicability to the field of social psychology. Indeed, in the course of analysis, we have encountered many of the central phenomena of social psychology and seen how they develop through the course of events. These include stereotypes, attitudes, social influence, minority influence, and polarization to name but a few. The changes that did (or did not) occur would have been inexplicable by restricting the analysis to a cognitive plane alone, without addressing the active construction of social categories and, most crucially, without studying ingroup understanding in relation to unfolding intergroup dynamics.

Crowd psychology points to the necessity of developing a historical and interactive set of methods and of concepts if we are to understand social understanding and social action. A historical and interactive psychology which focuses on the way in which our understandings shape and are shaped in practice, which looks at our cognitions in relation to the constraints on our action, and which recognizes how constraint in turn derives from the cognitions of others, is the only way of avoiding the bugbear of reification. Because of their transparent historical and interactive nature, crowd events provide an ideal location from which to generate an understanding of our dynamic psychological nature. It is also an ideal location within which to study that nature. There is much to be gained by restoring crowd psychology to the position of prominence it had at the birth of our discipline, but with the ambition of embracing crowd dynamism rather than repressing it.

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CHAPTER NINE

Conformity and Independence in Groups: Majorities and Minorities

Robin Martin and Miles Hewstone

Introduction

It has been estimated that there are over 200 attempts to influence our opinions every day. Every time we read a newspaper, listen to the television, or hear a debate, other people are trying to influence our attitudes and opinions. Sometimes these may be direct or active attempts to change our views (such as advertisements or health promotion campaigns). On other occasions they may be passive attempts (such as reporting opinion polls). In these situations people often support their arguments by claiming that most other people (or a majority of the population) hold a similar view, and discount alternative arguments by claiming that only a few people (or a minority) support that position. This provides an interesting research question, which is not only important for theoretical reasons but also has applied implications. Does the numerical support of a persuasive message (whether it be majority or minority) affect the level of attitude change? The aim of this chapter is to address this issue by reviewing research examining majority and minority influence.

Historically research on majority and minority influence has gone through three distinct chronological stages. The first stage of research (pre-1970), mainly conducted in North America, was concerned with the ability of the majority to cause individuals to conform or comply with its view. The second stage of research (late 1960s–1980), which was dominated by European researchers, concerned the study of active minorities and how these can influence the majority. A research question common to both the first and second stages of research was the identification of factors that either inhibited or facili-

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tated majority or minority influence. The final stage of research (1980–present) takes a very different approach. The main issue was, and is, to integrate both the first and second stage research traditions, which had until then remained distinct, and to compare majority and minority influence within the same research paradigm. This led to two main research questions. First, are majority and minority influence determined by the same or different processes, and second, what are the underlying psychological processes involved in majority and minority influence?

Since the research conducted in the first and second stages of research has been well summarized elsewhere (for reviews of majority influence see Allen, 1965, 1975; Kent, 1994; Levine & Russo, 1987; and for minority influence see, De Vries & De Dreu, in press; Maass & Clark, 1984; Maass, West, & Cialdini, 1987; Moscovici & Mugny, 1983; Moscovici, Mugny, & Van Avermaet, 1984; Moscovici & Nemeth, 1974; Mugny, 1984; Mugny & Pérez, 1991), this chapter focuses mainly on contemporary research conducted in the third chronological stage (1980–present). The major feature of this stage of research has been the development and testing of a number of theories of majority and minority influence. This chapter addresses the two main research questions identified above and also provides a review of the main theoretical developments. The chapter is divided into three sections. By way of introduction, the first part briefly considers the two stages of research examining either majority or minority influence. The second section provides a review of the main theories of majority and minority influence. The theories are categorized into whether they propose majority and minority influence determined by two separate processes (dual-process models) or the same process (single-process models). In the final section, we evaluate recent advances in the literature, identify research problems and comment on future research directions.

Early Research on Majority and Minority Influence

In this section we briefly review the first two stages of research which focused either on majority or minority influence.

The emergence of majority influence (pre-1970)

The first studies into social influence processes examined the conditions under which an individual will yield or conform to a numerical majority. These experiments typically involved judgments of an objective task (such as line lengths) and exposed naive participants to the erroneous responses of a majority of individuals (e.g., Asch, 1951; Crutchfield, 1955). This research convincingly demonstrated that an individual would conform to the judgments of a numerical majority even when that majority had given the obviously wrong response.

The explanation for conformity was derived from the functionalist approach, which was the dominant perspective of small-group behavior at that time. Based on social comparison theory (Festinger, 1950; see Darley, this volume, chapter 14), the assumption of

the functionalist approach is that individuals desire to evaluate their abilities by comparing themselves to significant others. There is a number of reasons why individuals might have conformed in these experiments. First, participants were in a situation where their judgment differed from the majority and they may have conformed to ensure majority-group membership (or to avoid minority-group membership). Second, since people assume that the majority is more likely to be correct than one person ("several pairs of eyes are better than one"), the participant may conclude that he or she is wrong and the majority is correct. The validity of the majority, in the eyes of the participant, has been shown to be crucial for conformity to occur and this is consistent with the functionalist explanation (see Allen, 1965). Explanations of conformity based upon the need for social approval and judgment verification are represented in Deutsch and Gerard's (1955) distinction between two types of social influence underlying conformity: *Normative social influence* ("... an influence to conform with the positive expectations of others," p. 629) and *Informational social influence* ("... an influence to accept information obtained from another as evidence about reality," p. 629).

The need to compare oneself against the majority position in order to validate one's judgments renders individuals dependent upon the majority members. Jones and Gerard (1967) outline two forms of dependency: *Affect* dependency where individuals rely upon others for the satisfaction of personal needs and *instrumental* dependency where individuals rely upon others for accurate information about the environment. Applying this line of reasoning to majority influence, when a person holds a view different from the majority then that individual becomes dependent upon the majority in order to validate his or her views, and will comply with the majority's position to reduce uncertainty. The most common factors examined in relation to dependency were the majority's size, status, and power with increases in each of these factors leading to greater conformity.

One of the features of this research was the predominant focus on the ability of the majority to influence the individual, which neglected perhaps the theoretically more interesting question, whether the individual (or minority) can influence the majority. Perhaps this focus was ignored because it would contradict the spirit of the functionalist approach with its emphasis on dependency as the key psychological construct. Therefore, according to this approach, social influence can only flow from those who have the power to create psychological dependency (such as a majority) to those who do not (such as a minority). Deviance, within the functionalist approach, is seen as dysfunctional and a threat to group harmony. Deviants either conform to the group or face rejection.

The emergence of minority influence (late 1960s–1980)

Nearly all research on social influence processes until the mid-1960s had focused on how the majority makes individuals conform to or comply with its position. Serge Moscovici and his colleagues were the first to identify a "conformity bias" in the literature and argued that this led to the dominance of the functionalist approach toward social influence, with its reliance on dependency as its explanatory variable (Moscovici & Faucheux, 1972). Indeed, Moscovici (1976) suggests that researchers have over-relied upon dependency as

an explanation by stating that “The French say ‘cherchez la femme’; social psychologists say ‘look for dependence, and everything will be explained’.” (p. 19)

Moscovici (1976) provides a detailed analysis of the functionalist account of social influence and contrasts this with his alternative “genetic” model in his book *Social Influence and Social Change* (see Kelvin’s, 1979, review of the book and Moscovici’s, 1979, rejoinder). A detailed account of the differences between these models is beyond the scope of this chapter (see also Levine, 1980), however, one of the shortcomings of the functionalist approach, according to Moscovici, was that it promoted a unilateral perspective on social influence which saw influence only flowing from the majority to the minority. Moscovici, by contrast, argued that both the majority and minority can be the source and target of influence and therefore social influence processes should be characterized as bilateral. Another major difference between the genetic and functionalist models was the status of dependency as a cause of social influence. Moscovici rejected dependency as a causal factor in minority influence because a minority, by definition, lacks many of the attributes necessary to exert pressures toward conformity (e.g., power, status, size). Instead, he argued that social influence arises from the conflict that occurs between social entities and that social influence stems from the resolution of that conflict which can be intrapersonal (from confronting a position which is different from one’s own) and interpersonal (from confronting others holding different opinions).

Moscovici complemented his experimental analysis of minority influence by analyzing several case histories of successful deviants, or what he termed “active” minorities (such as Galileo, Freud) and social movements (such as ecologists, student movements). From these analyses Moscovici argued that the influence of the minority is rooted in the way the minority behaves and the attributions which this behavior leads to. He termed this the minority’s *behavioral style*, which is defined as the “. . . way in which the behavior is organized and presented . . . to provoke the acceptance or rejection of a judgment . . . the fact that it maintains a well-defined point of view and develops it in a coherent manner” (Moscovici, Lage, & Naffrechoux, 1969, p. 366). Moscovici (1976) identified five behavioral styles: investment, autonomy, consistency, and fairness, which increase influence, and rigidity, which decreases it. By far the most researched behavioral style has been consistency, perhaps because it is the easiest to operationalize experimentally. This research shows that response consistency is important for minority influence to occur (see Maass & Clark, 1984, for a review).

To explain why behavioral style is important to minority influence, Moscovici relies upon Kelley’s (1967) attribution theory (for alternative perspectives see Chaiken & Stangor, 1987; Eagly & Chaiken, 1993; Maass & Clark, 1984). By being consistent the minority is “visible” in the group and attracts, or even demands, attention (Schachter, 1951). Response consistency leads to attributions of certainty and confidence, especially when the minority is seen to publicly reject the majority position. Such a style of behavior creates two types of conflict within members of the majority: one cognitive (from an increase in response diversity) and the other social (from threatened interpersonal relations). Majority members resolve this conflict by questioning their own position and considering the minority’s position as a valid alternative.

One of the most important outcomes of this research was the recognition that one needs to examine the impact of minorities beyond the public level. While the impact of minorities on public responses was generally low, probably because individuals

wish to avoid publicly agreeing with a deviant group, it was greater on private or indirect dimensions (e.g., Maass & Clark, 1983, Moscovici et al., 1969; Mugny, 1976, 1982).

While Moscovici's early theorizing about minority influence has had a major impact on social influence research, it has been criticized by a number of researchers (e.g., Cramer, 1975, see replies by Moscovici, 1975 and Nemeth, 1975; Kelvin, 1979, see reply by Moscovici, 1979; Levine, 1980; Turner, 1991). One of the main criticisms has been Moscovici's rejection of dependency as a causal mechanism in conformity (for alternative views see Doms, 1983; Hollander, 1960; Levine, 1980; Wolf, 1979). Instead, he argues that behavioral styles can explain many of the findings in both majority and minority influence (Moscovici & Nemeth, 1974).

Theoretical Approaches to Majority and Minority Influence

In introducing this chapter we identified three distinct chronological stages of research. The first and second stages examined majority and minority influence, respectively. The third stage (1980–present) has taken the logical step of examining both majority and minority influence within the same paradigm. This research focuses on comparing the psychological processes involved in each type of influence and considers whether they are determined by the same process or two distinct processes. Theoretical developments in this research can be conveniently grouped into whether the model proposes that majority and minority influence are determined by two processes (dual-process models) or by one process (single-process models). Below we provide a description of the main models within each of these frameworks and also evaluate the relevant research evidence.

Dual Process Models

There are currently three major theoretical approaches which propose that majority and minority influence are determined by two qualitatively different processes: Conversion theory, the objective-consensus approach, and convergent-divergent theory. In addition, three contingency theories of majority and minority influence have been proposed: conflict elaboration theory, source/position congruence, and context/comparison model.

Moscovici's (1980) conversion theory

One of the most influential perspectives in this area has been Moscovici's (1980, 1985) dual-process model of majority and minority influence, termed *conversion theory*. The central tenet of his thesis is that all forms of influence, whether from a majority or minority, result in conflict and that individuals are motivated to reduce that conflict. The resolution of conflict, however, varies depending on the nature of the source. In the case of

majority influence, Moscovici proposes that individuals engage in a *comparison process* where they concentrate attention on “. . . what others say, so as to fit in with their opinions or judgments” (1980, p. 214). Thus, in the face of a discrepant majority, individuals engage in social comparison and, since identification with a majority is desirable, conform to the majority position without the need for a detailed appraisal of the majority’s message. This results in public compliance with the majority position with little, or no, private or indirect attitude change. In the case of minority influence, social comparison is unlikely as minority membership is often associated with undesirable characteristics. However, through its distinctiveness, Moscovici proposes that the minority can encourage a *validation process* leading individuals to “. . . examine one’s own responses, one’s own judgments, in order to confirm and validate them . . . to see what the minority saw, to understand what it understood” (1980, p. 215). While minority influence may not lead to public agreement, for fear of being categorized as a minority member (Mugny, 1982), the close examination of the minority’s position may bring about conversion on an indirect, latent or private level. To be more precise, Moscovici defines conversion as “. . . a subtle process of perceptual or cognitive modification by which a person gives up his/her usual response in order to adopt another view or response, without necessarily being aware of the change or forced to make it” (Moscovici & Personnaz, 1980, p. 271).

Moscovici’s conversion theory represents a major change from his earlier genetic model. The focus of Moscovici’s theory has changed from an attributional account (based upon perceptions derived from the source’s behavioral style) to a more cognitive explanation (where influence results from the degree of elaboration of the source’s message; but see Bohner, Erb, Reinhard, & Frank, 1996; Moskowitz, 1996). Perhaps reflecting changes in social psychology more generally, conversion theory embraces the social-cognition perspective which views individuals as information processors. In the case of majority influence, the information processing focuses on the relationship between the source/target and the desire to identify with the majority. In the case of minority influence, the information processing focuses upon the content of the minority’s message and individuals’ evaluation of the minority’s position by considering arguments for and against the issues and this elaboration can lead to attitude change. Thus, Moscovici suggests that the conflict associated with majority influence is resolved by a process of social comparison and public compliance while the conflict associated with minority influence leads to an examination of the content of the message and is resolved by public rejection but private acceptance.

Evidence relevant to conversion theory can be drawn from several lines of inquiry. In this review we focus on evidence relevant to three key processes: Focus of attention, cognitive activity, and attitude change.

Focus of attention. Conversion theory predicts that a majority should encourage individuals to focus their attention on the relationship between themselves and members of the majority (interpersonal focus) while a minority should lead to greater attention being focused on the content of the minority’s message (message focus). Studies which examine these hypotheses typically use simple stimuli (such as noises) and have shown that individuals pay more attention to these stimuli when they are associated with a minority

rather than a majority position (e.g., Campbell, Tesser, & Fairley, 1986; Tesser, Campbell, & Mickler, 1983; see also Guillon & Personnaz, 1983, which focused on group discussion).

Another way to gauge focus of attention is individuals' ability to recall the source's message. If individuals focus more on a minority message than a majority message, as proposed by conversion theory, one would expect greater recall of the arguments for the minority than the majority. The results of studies reporting recall are, however, contradictory; with some showing greater recall of a minority message, and therefore consistent with conversion theory (e.g., Moscovici, Mugny, & Papastamou, 1981; Nemeth, Mayseless, Sherman, & Brown, 1990), while others show greater recall for a majority message (e.g., Maass & Clark, 1983; Mackie, 1987; Trost, Maass, & Kenrick, 1992), and some showing no difference between a majority and minority (e.g., Alvaro & Crano, 1997). One problem in these studies is that the recall measures were often taken at the end of the experiment, with many dependent variables intervening between exposure to the message and recall, thus making it difficult to disentangle the effects of the source on recall.

Cognitive activity. In terms of the *quantity* of cognitive activity, Moscovici predicts that a minority will lead to greater message scrutiny than a majority. This hypothesis has been examined by exposing participants to a message with either strong or weak arguments (see Petty & Cacioppo, 1986). If participants are motivated (and able) to process the message, they should be more influenced by a strong and persuasive message than by a weak and nonpersuasive one. Differences between strong and weak messages (showing message processing) have been found for a majority *and* minority source in different circumstances (e.g., Baker & Petty, 1994; Bohner, Frank, & Erb, 1998; Crano & Chen, 1998; de Dreu & De Vries, 1993; Martin & Hewstone, 2000). It appears that the level of message processing, however, depends upon the processing demands which prevail at the time of message presentation. Martin and Hewstone (2000) show that when the message-processing demands are low, then individuals may rely upon a heuristic-like "consensus equals correctness" and show greater majority than minority influence; when there is a medium level of processing demands there tends to be greater message processing in the minority than majority condition; and finally, when processing demands are high there tends to be message processing for both a majority and minority source. These studies have been inconclusive as to which source condition leads to a greater amount of processing and show that situational factors can have as much impact on the amount of message processing as do source characteristics.

In terms of the *quality* of thinking, Moscovici predicts that people are more likely to generate arguments and counter-arguments to a minority message than to a majority message. To test this, Maass and Clark (1983) exposed participants to both a majority and minority message concerning gay rights and measured the quality of thinking using a thought-listing technique (after reading the message, participants write down all their thoughts on that topic). While there was no difference in the total number of thoughts, the minority led to more pro-message arguments and they were less likely to generate counter-arguments. Different results were obtained by Mackie (1987) who found a majority led to a greater number of cognitive responses than did a minority and, moreover, the

majority led to more favorable thoughts, which was a reliable predictor of attitude change. Other studies, using the thought-listing technique, have found results suggesting differences in the quantity and quality of thinking following majority and minority influence, but the pattern of results is inconsistent making it difficult to draw reliable conclusions (e.g., Alvaro & Crano, 1997; de Dreu & De Vries, 1993, 1996; Martin, 1996; Mucchi-Faina, Maass, & Volpato, 1991).

Attitude change. Conversion theory predicts that majorities will have more public than private influence and that minorities will have more private than public influence. Studies examining attitude change on different levels of influence can be grouped into four categories (cf. Maass, West, & Cialdini, 1987): *Time* (influence measured immediately following exposure to the source vs. influence measured later in time, e.g., Crano & Chen, 1998; Moscovici et al., 1981); *specificity* (influence is specific to the message vs. influence which goes beyond the message and considers a wider set of issues – this dimension is commonly referred to as “direct” and “indirect” influence respectively, e.g., Alvaro & Crano, 1997; Moscovici et al., 1981; Mugny & Pérez, 1991); *privacy* (responses which are made in public vs. those that are made in private and anonymously, e.g., Maass & Clark, 1983, Martin, 1988a, 1988b); and *awareness* (participants are aware of the connection between source message and influence dimension vs. not aware of this connection, e.g., Brandstätter, Ellmers, Gaviria, Giosue, Huguet, Kroon, Morchain, Pujal, Rubini, Mugny, & Pérez, 1991; Moscovici & Personnaz, 1980, 1991).

One of the most provocative findings in this area has been Moscovici and Personnaz’s (1980) claim that a minority, but not a majority, can cause perceptual conversion. Using a color perception paradigm they measured both manifest and latent levels of influence (corresponds to the “awareness” dimension noted above). After viewing a colored stimulus, a person who transfers his or her gaze to a white background briefly perceives a different color (termed an afterimage) which is the complementary color of the original stimulus. Since participants are presumably unaware of the link between slide and afterimage color, the latter represents an unconscious and latent level of influence. Since latent influence avoids a range of response biases, such as the conscious desire to avoid changing to a deviant position, it potentially offers the best situation to test conversion theory (for reviews see Martin & Hewstone, in press; M. Personnaz & Personnaz, 1994). The results of the Moscovici and Personnaz (1980) study appeared to support conversion theory in that a minority produced perceptual conversion (afterimages shifted toward the complement of the slide color advocated by the source) but a majority did not. While Moscovici and his colleagues have replicated these findings (e.g., Moscovici & Personnaz, 1986; Personnaz, 1981) other researchers have not (e.g., Doms & Van Avermaet, 1980; Martin, 1995, 1998; Sorrentino, King, & Leo, 1980). Furthermore, in a review of these studies Martin and Hewstone (in press) concluded that a range of methodological problems renders interpretation of the results difficult and they questioned whether the experiments sufficiently meet the criteria to measure latent influence.

Wood, Lundgren, Ouellette, Busceme, and Blackstone (1994) conducted a meta-analytic review of 97 studies into majority and minority influence and concluded that, “Minority impact was most marked on measures of influence that were private from the source and indirectly related to the content of the appeal and less evident on direct private influence measures and on public measures” (p. 323). There was less

support for Moscovici's claim that majority influence takes the form of greater public than private attitude change. Indeed, as noted in narrative reviews of the area (e.g., Maass & Clark, 1984), there are few studies showing the specific pattern of public and private influence predicted by conversion theory (see David & Turner, 1996, for an exception).

One cannot overestimate Moscovici's contribution to the area of majority and minority influence (which explains why his theory takes up the largest proportion of this review). It could be argued that Moscovici's greatest impact has been to put minority influence firmly on the research agenda. Prior to Moscovici, research in social influence had restricted its focus solely to the influence of the majority on the individual (or minority) while it is now accepted that both a majority and minority can be the source and target of influence. Thus Moscovici has been instrumental in analyzing majority and minority influence within the *same* research paradigm (note also Nemeth, 1976, quoted in Nemeth, 1995). Hypotheses derived from Moscovici's theory have received the most empirical research attention and, as reviewed above, there is evidence to support many aspects of his theory. If we have one criticism of conversion theory, it is that we believe it needs to say more about *why* minorities have influence. To this extent, we would argue that concepts such as "behavioral style" need to be re-introduced onto the research agenda and integrated into conversion theory.

The objective-consensus approach

One of the biggest challenges to conversion theory has come from recent theoretical work based on concepts developed in the persuasion literature. According to the *objective-consensus approach* (Mackie, 1987, see also de Dreu, De Vries, Gordijn, & Schuurman, 1999; De Vries, de Dreu, Gordijn, & Schuurman, 1996), there are two reasons why individuals will systematically process a majority message. First, people assume that the majority view reflects reality in the sense that "several pairs of eyes are better than one" and the majority position ". . . informs recipients about the probable validity of the arguments presented, directs attention to them, and results in the majority messages receiving considerable processing" (Mackie, 1987, p. 50). Second, people process the majority message if it breaks the "false consensus heuristic" (cf. Ross, Greene, & House, 1977). This states that people believe that they share similar attitudes to the members of the majority and hold different attitudes from those in the minority and, as a consequence, they expect to agree with the majority and disagree with the minority. When faced with a disagreeing majority the consensus expectation is broken, which is surprising and this motivates people to analyze the majority arguments in an attempt to understand this discrepancy. By contrast, exposure to a discrepant minority is consistent with the consensus heuristic and therefore it is not surprising, and consequently one is less likely to process the minority's message. In contrast to conversion theory, this approach suggests that it is a majority source that results in greater message processing.

In a series of four studies, Mackie (1987) showed that majorities were able to induce systematic processing as shown by private acceptance of the message which generalized to related issues. It should be noted, however, that Mackie's (1987) results are at odds with the literature which reliably reports greater indirect influence with minority mes-

sages (see Wood et al., 1994). Mackie argues that whether majority influence leads to systematic processing or acts as a heuristic cue (resulting in public compliance and little private change) might be moderated by the targets' ability or motivation to process the message. This idea is yet to be adequately tested but some studies have shown that majority influence is reduced when the ability to process the message is hindered (Schuurman, Siero, de Dreu, & Buunk, 1995) and is enhanced when both ability and motivation to process are increased (Martin & Hewstone, 2000).

Other reasons why a majority might lead to greater message processing, other than by violating the consensus heuristic, have been suggested by Baker and Petty (1994). People may assume that attitudes held by a majority are more likely to become adopted than those held by a minority and therefore believe it would be more important to process the majority's arguments. Also, individuals may wish to identify with the majority group and process the majority message in order to discover what their own attitudes should be. Baker and Petty (1994) clearly believe that these factors lead people to elaborate the majority's message but one could equally argue that these factors operate as a peripheral cue and lead to influence without detailed message processing.

It should be recognized that the objective-consensus approach is a relatively new perspective in this area and, as a consequence, there has been little empirical research testing its main predictions. However, this approach has helped to integrate concepts and techniques from the persuasion literature into majority and minority research (see also e.g., Baker & Petty, 1994; Crano & Chen, 1998; De Vries et al., 1996; Wood, Pool, Leck, & Purvis, 1996). This has led to two major benefits to our understanding of majority and minority influence processes. First, these approaches focus attention on the underlying psychological processes and offer techniques to measure such processes (e.g., thought-listing) and methods for testing determinants of influence (e.g., mediation analysis). Second, this approach recognizes that both majorities and minorities can have influence on both public and private levels and potentially provides a framework for identifying when these effects should occur.

Nemeth's (1986) convergent-divergent theory

The third, major dual-process model of majority and minority influence arises from the research conducted by Charlan Nemeth and her colleagues (see Nemeth, 1986, 1995). According to Nemeth's *convergent-divergent theory*, majority and minority influence result in different types of thinking styles, each of which requires cognitive capacity. Nemeth argues that majority influence leads individuals to focus upon the majority position whereas minority influence leads individuals to consider a range of issues, some of which may not have been proposed by the minority. Nemeth offers a number of reasons why majority and minority influence might lead to different thinking styles. First, exposure to a counter-attitudinal majority is more stressful than exposure to a counter-attitudinal minority, presumably because the former implies the target is in a minority group. Second, in line with the principles of the objective-consensus approach, people expect their attitudes to agree with a majority and to differ from the minority and, therefore, they are motivated to agree with a majority and reject a minority. Since stress is

known to reduce the focus of attention (Easterbrook, 1959), majority influence is likely to result in *convergent thinking* which is characterized by a "... convergence of attention, thought, and the number of alternatives considered" (Nemeth, 1986, p. 25). In contrast, a minority causes less stress, which permits *divergent thinking* that involves "... a greater consideration of other alternatives, ones that were not proposed but would not have been considered without the influence of the minority" (Nemeth, 1986, p. 25). What is radical about Nemeth's perspective is that it suggests minority influence leads individuals to consider a wider range of alternatives than would have been considered without exposure to the minority, and this can result in improved judgments and performance.

One of the major differences between Nemeth's theory and that of conversion theory and the objective-consensus approach concerns the type of processing underlying majority and minority influence. All three perspectives agree that a majority can cause influence, but according to conversion theory this is due to the desired relationship with the source without considering, in depth, the majority arguments. In contrast, both the objective-consensus approach and Nemeth argue that majority influence is determined by systematic processing of the majority message. But the objective-consensus approach argues that influence would be due to both message- and issue-relevant thinking, while Nemeth contends that influence would result only from message-relevant thinking. The biggest difference between these theories concerns minority influence. According to conversion theory, minority influence leads to the generation of pro- and counter-arguments to assess the minority's message. By engaging in these thought processes, individuals begin to see the logic of the minority's position and can be influenced by it. The objective-consensus approach, by contrast, proposes that motivation to process the minority position is low (because it is consistent with the consensus heuristic) and therefore the minority arguments are not analyzed in detail. Finally, Nemeth argues that a counter-attitudinal minority induces issue-relevant rather than message-relevant thinking, a systematic consideration of issues associated with the minority position but not necessarily stated by it.

A diverse body of evidence supports Nemeth's hypotheses which focus on either individual performance or the generation of novel and creative responses. In tasks where performance benefits from divergent thinking, minority influence has been shown to lead to better performance than majority influence (e.g., Martin & Hewstone, 1999; Nemeth & Kwan, 1987; Nemeth & Wachtler, 1983); while on tasks where performance benefits from convergent thinking, majority influence has been found to lead to better performance than minority influence (e.g., Nemeth, Mosier, & Childs, 1992; Peterson & Nemeth, 1996). Further evidence for Nemeth's predictions comes from studies showing that exposure to a minority leads to the generation of more creative and novel judgments compared to exposure to a majority (e.g., Mucchi-Faina et al., 1991; Nemeth & Kwan, 1985; Nemeth & Wachtler, 1983; Volpato, Maass, Mucchi-Faina, & Vitti, 1990; see also Martin, 1996). However, whereas exposure to a minority leads to the use of multiple strategies in solving problems, a majority leads individuals to focus on the majority-endorsed strategy (e.g., Butera, Mugny, Legrenzi, & Pérez, 1996; Legrenzi, Butera, Mugny, & Pérez, 1991; Nemeth & Kwan, 1987; Peterson & Nemeth, 1996). Finally, minorities encourage divergent thinking involving issue-relevant thinking, whereas

majorities lead to message-relevant thinking (e.g., de Dreu & De Vries, 1993; De Dreu et al., 1999; Trost et al., 1992).

We identify two areas which we believe need further clarification. First, tests of Nemeth's theory have used simple cognitive tasks (such as the stroop test or identifying anagrams) where an objectively correct response and, therefore, performance can be assessed. There have been few tests of the theory with more complex cognitive tasks (but see Martin & Hewstone, 1999). For this reason, it is difficult to evaluate Nemeth's theory against other models of social influence and it is not known whether the theory will apply to more cognitively complex issues such as attitudes (Kruglanski & Mackie, 1990). A second issue which needs attention concerns establishing a causal link between the psychological processes proposed by Nemeth's theory and the consequences of influence. For example, research needs to establish whether convergent and divergent thinking mediate majority and minority influence, respectively.

Contingency theories of majority and minority influence

The three main theories discussed above (conversion theory, the objective-consensus approach, and convergent-divergent theory) propose specific processes for majority and minority influence. In contrast to this approach, three recent theories have proposed a contingency approach where the type of process involved, and consequently the level of influence, is a function of the source (majority or minority) and a number of contingency variables.

The first contingency approach we consider is the *conflict elaboration theory* proposed by Mugny, Pérez, and their colleagues (Mugny, Butera, Sanchez-Mazas, & Pérez, 1995; Pérez & Mugny, 1996: for empirical tests of the model see Brandstätter et al., 1991; Butera et al., 1996; Butera & Mugny, 1995; Pérez, Mugny, Butera, Kaiser, & Roux, 1991; Sanchez-Mazas, Pérez, Navarro, Mugny, & Jovanovic, 1993). The basic premise of the theory is that influence is “. . . a consequence of divergence from some relevant others (namely, the source of influence); the notion of conflict elaboration refers to the way people give meaning to this divergence” (Mugny et al., 1995, p. 161). The nature of the conflict elaboration, and the types of influence, depend on the nature of the task and the source introducing the divergence.

These researchers propose two key dimensions for categorizing tasks. The first dimension concerns the *relevance of making an error*. If the task is objective with a clearly correct response (with all other responses being wrong) then the relevance of an error to that individual is high whereas if the task is one where objectively correct responses cannot be determined, then the relevance of making an error to the individual is low. The second dimension concerns whether the responses are *socially anchoring*. If the response defines the individual within a particular group membership then it is socially anchoring whereas if the response does not define an individual in terms of a particular social category then the task is non-socially anchoring. By crossing these two dimensions four social situations are created each of which has different hypotheses as to the results of conflict elaboration. The implications for conflict elaboration for each of these situations is complex and beyond the scope of this review. However, most research in majority and minority influ-

ence focuses on tasks which are socially anchoring (i.e., where each response indicates membership of a particular social group, such as a majority or minority) and where the relevance of making an error can be either low (e.g., attitude studies) or high (e.g., problem-solving studies). When the task is socially anchoring and the relevance of making an error is *low*, conflict elaboration has the aim of maintaining intergroup differentiation, that is, agreement with one's ingroup and disagreement with the outgroup and to avoid attributing to oneself negative characteristics associated with a particular source. In this situation, the most important characteristic of the source concerns its social group membership and whether this differs from the target of influence. In contrast, when the task is socially anchoring and the relevance of making an error is *high*, people believe that one answer is correct (though they may not know what it is) and they are concerned with increasing their correctness on the task and/or with their own self-image concerning their task ability. In this situation, source competence will be important in determining social influence.

The second contingency theory, concerning *source/position congruence* (Baker & Petty, 1994), and suggests that message processing is determined by the relationship between the source and whether it breaks the consensus heuristic. When the source/position is consistent with the consensus heuristic (pro-attitudinal majority or counter-attitudinal minority, termed "balanced") this situation is expected and therefore it is unlikely to lead to message processing. However, when the source/position is inconsistent with the false consensus heuristic (counter-attitudinal majority or pro-attitudinal minority, termed "imbalanced") this is unexpected and it motivates individuals to process the message in order to understand the incongruence.

Baker and Petty (1994) identify two processes that might motivate message processing in the imbalanced conditions. First, imbalanced situations are surprising as they break the consensus heuristic and this may lead to processing of the message in order to understand the incongruency. Second, imbalanced situations may be threatening to those exposed to the message (e.g., being told the majority has a different view implies that one is in the minority group) and this might lead to message processing in order to reduce the negative feelings associated with the threat. However, as indicated earlier, the status of these variables as central or peripheral cues is uncertain – the researchers advocate the former but the latter appear to be equally likely. Also, alternative congruency factors other than source/position congruence have been identified (such as, source/message content, Maheswaran & Chaiken, 1991) and indeed it is possible that a multitude of factors may be incorporated.

The third contingency approach, the *context/comparison model* (Crano & Alvaro, 1998; for empirical tests of the model see Alvaro & Crano, 1997; Crano & Chen, 1998; Crano & Hannula-Bral, 1994), identifies several contingency factors which need to be considered in order to understand when influence occurs. These factors are: (a) source status (majority/minority); (b) source group membership (ingroup/outgroup); (c) nature of issues under consideration (subjective/objective); (d) relevance of the attitude object (low/high); (e) source-target position proximity (near/far); and finally (f) the centrality of the attitude to the target (unvested/central). Two processes are important in determining whether there is direct or indirect influence: Message elaboration and source derogation.

In situations involving *weak or unvested attitudes*, an ingroup minority can be persuasive because it is perceived by majority members as being distinctive and this leads to message elaboration. Because the issue is low on centrality, there will be little counter-argumentation of the ingroup minority's message. Furthermore, the ingroup status of the minority means it will not be derogated by the majority because the attitude dimension has little implication for ingroup membership. Majorities, on the other hand, are unlikely to have much influence. First, the majority is unlikely to induce compliance because the desirability of majority-group membership is low when the issues are unimportant. Second, the majority is not distinctive and therefore does not trigger message elaboration.

In situations involving *vested or central attitudes*, targets of ingroup minority influence are reluctant to be identified with the minority position yet there is a reluctance to derogate other ingroup members. This leads to what Crano and Alvaro (1998) term the *leniency contract*, which allows the target to elaborate upon the ingroup minority's message without source derogation, "open-mindedly, with little defensiveness or hostility" (Crano & Alvaro, 1998, p. 180). The leniency contract implies that the ingroup minority will not lead to direct attitude change but the elaboration of the message might lead to indirect attitude change. In the case of outgroup minorities, however, counter-argumentation of the message and source derogation render its potential impact on both direct and indirect levels as minimal. With majority influence, the model predicts that there should be a large impact on a public or direct level. Given the importance of the issue, majority-group membership is highly desirable and compliance can occur without message elaboration. However, the majority can cause indirect influence in certain situations which encourage message elaboration, such as high self-interest (e.g., Mackie, 1987).

The three contingency theories reviewed above represent some of the most recent theoretical advances in this area and it is likely that they will be the main focus for future theoretical development and empirical testing (we would also include self-categorization theory, which is reviewed below, in this category). The development of the contingency approach has arisen out of the recognition that both majorities and minorities can have influence (both public and private) in different situations.

Single-Process Theories

In this section we consider a number of theories which consider majority and minority influence to be determined by the same process.

Mathematical models

Latané's (1981) *social impact theory* is a general theory about how individuals react to social pressure (also see Latané and Bourgeois, this volume, chapter 10). The basic assumption of social impact theory is that social influence is determined by the amount of social impact the source has upon the target. Social impact is conceptualized as the

“. . . result of social forces (like the physical forces of light, sound, gravity, and magnetism) operating in a social force field or social structure” (pp. 343–344). Social impact, according to Latané, is determined by a multiplicative function of three factors: Strength (e.g., status), immediacy (e.g., physical closeness), and number (i.e., how many people hold that position). An increase in any one of these factors should have a corresponding increase in the social impact experienced by the target and consequently greater social influence should occur. The relationship between these three factors, their impact upon the target and influence is governed by a further mathematical consideration. Drawing an analogy to the impact of physical stimuli, Latané argues that the relationship between these three factors and social impact is not linear but follows a power function based on the number of people holding that position. Since the proposed exponential value for the power function is less than one, social impact theory predicts that the addition of each person into the source group increases the social impact by a factor less than the addition of the predecessor to that group.

Latané and Wolf (1981) have applied the principles of social impact theory to majority and minority influence (see also Latané, 1996). Since the majority possess more of the “ingredients” to reward or punish group members (which would affect their strength and immediacy) then these variables are likely to have a greater impact in majority than minority influence. However, holding strength and immediacy constant, majority and minority influence will be determined by a power function of the number of individuals present in each group. Since the majority, by definition, has more people within it than the minority then it will always exert greater social impact and consequently cause more social influence.

Latané and Wolf (1981) support their theory with evidence concerning the relationship between majority size and conformity, which social impact theory predicts should increase as a power function of the number in the majority with an exponential value less than one. For example, Latané and Wolf (1981) cite a re-analysis of a conformity experiment by Gerard, Wilhelmy, and Conolley (1968), which varied majority size from 1 to 7, and showed a relationship consistent with a power function having an exponential value less than one. There have been few experimental studies which have directly tested the assumptions of social impact theory applied to minority influence. However, both Wolf and Latané (1983) and Wolf (1985) show that social impact theory variables (in particular, the number of people in the source condition) were better predictors of social influence than aspects of the source’s behavioral style (such as, response consistency) (see also Hart, Stasson, & Karau, 1999; Latané, Liu, Nowak, & Bonevento, 1996).

Another mathematical model of majority and minority influence has been proposed by Tanford and Penrod (1984) termed the *social impact model*. Like social impact theory, the social impact model proposes a mathematical relationship between majority size and conformity. However, the social impact model differs from social impact theory in a number of ways. For example, the social impact model argues that the second and third members of the group should have the most impact upon conformity whereas social impact theory proposes that the first group member has the most impact. Also, the social impact model proposes an S-shaped relationship between majority size and conformity where influence reaches an asymptote and, finally, the social impact model acknowledges a number of additional variables which can affect influence, such as susceptibility to influ-

ence. Like social impact theory, the social impact model has not generated research testing its predictions with respect to minority influence (see Clark, 1998, for an exception).

The mathematical models of social impact theory and the social impact model are both single-process models as they suggest that majority and minority influence are determined by the same set of variables. There are three main concerns regarding these models. First, they are descriptive in nature and their level of analysis is the characteristics of the source and, as a consequence, they do not provide an understanding of the psychological processes involved in social influence. While these models may be able to predict *when* influence occurs they say little of *why* it occurs (for an alternative consider Mullen's, 1983, mathematical model which proposes that self-attention explains the relationship between majority size and conformity). A further problem of the descriptive nature of these theories comes when one considers the evidence they cite in favor of their models, that is, their mathematical equation for influence accounts for more variance in conformity than a simple linear equation. Correspondence between predicted findings (based on numbers in the source group) and actual findings does not, of course, indicate causality – there may be other factors associated with source size that may be the causal agent (e.g., one could argue that as group size increases so do perceptions of confidence). Problems of disentangling source size from other variables bring us to our second concern. The concept of source size is ill-conceived in these models and is taken simply to refer to the number of people holding a position. As pointed out by Wilder (1977), people in a group may not be responding independently of each other and therefore a large group of (non-independent) individuals may be perceived as a single entity and consequently have less social impact. The third main concern is that neither of these models considers the influence of the source beyond the public or direct level and therefore they cannot explain the private and indirect influence often observed with minority influence (Wood et al., 1994). These models could, in principle, be adapted to take into account different levels of influence but this would require additional assumptions which would potentially violate their single-process status.

Self-categorization theory

Turner and his colleagues have proposed a general theory of group behavior called *self-categorization theory* (Turner, 1991; Turner, Hogg, Oakes, Reicher, & Wetherall, 1987; see Hogg, this volume, chapter 3). In its application to social influence processes its fundamental assertion is that influence flows only from individuals who are categorized as similar to self on dimensions relevant to the influence topic. Similar others provide consensual validation for one's opinions and therefore disagreement with such individuals can result in influence occurring. Dissimilar others do not provide consensual validation and therefore are unlikely to be a source of influence. Indeed, the very fact that dissimilar others are different (or "outgroup") may be enough to explain the difference in opinion. It does not follow from self-categorization theory that similar others always have influence, as individuals may resist change by recategorizing themselves, the group and the relevance of the influence topic or by acting upon the source to change their opinions.

Applying self-categorization theory to minority influence suggests that a minority will only have influence if it is defined as a subgroup of the target's ingroup and avoids being categorized as being an outgroup. The categorization of the minority as different from self reduces its influence. However, research reviewed earlier shows that minorities often have more indirect than direct influence. Self-categorization theory tries to explain this by suggesting that indirect influence occurs when there is a shift in perspective from intra-group to intergroup. In the intergroup perspective, individuals perceive the minority in a wider context and begin to see the minority as "part of 'us' rather than 'them,' basically on our side, standing for basic values that 'we' all share" (Turner, 1991, p. 171). In this case, the minority can lead to an indirect change without it being apparent on the direct level. Evidence for self-categorization comes from research by David and Turner (1996, 1999) who found majority compliance and minority conversion *only* when the source of influence was categorized as similar to the target of influence.

Self-categorization theory's predictions concerning private or indirect change differ from Moscovici's (1980) conversion theory. According to conversion theory it is the minority's deviancy (or dissimilarity from self) which promotes validation and triggers conversion, whereas for self-categorization theory conversion only occurs for minorities categorized as similar to self. Research on ingroup and outgroup minority influence provides an opportunity to test the predictions of these theories (for a review see Pérez & Mugny, 1998). Both theories would expect an ingroup minority to have more influence than an outgroup minority and research confirms this prediction (e.g., Alvaro & Crano, 1997; Clark & Maass, 1988a, 1988b; Crano & Chen, 1998; Maass, Clark, & Haberkorn, 1982; Mugny, Kaiser, & Papastamou, 1983). However, these theories differ in relation to the impact of ingroup and outgroup minorities on indirect or private influence. According to conversion theory, one would expect an outgroup minority to be more distinctive than an ingroup minority and it should therefore be more likely to produce conversion. Self-categorization theory, in contrast, predicts that influence should only occur from similar others and therefore an outgroup minority should not produce private change. Indeed, as David and Turner (1996) state, "Any evidence that psychological out-group membership can produce influence is contrary to the theory" (p. 182). Evidence on this issue is mixed. While some studies have found outgroup minorities to have greater private than public influence (e.g., Aebischer, Hewstone, & Henderson, 1984; Martin, 1988a, 1988b; Mugny et al., 1983; Pérez & Mugny, 1987) other studies have not found this effect (e.g., Clark & Maass, 1988a, 1988b). Finally, a number of problems associated with the definition of ingroup and outgroup status have been identified which render comparison across studies difficult (e.g., David & Turner, 1996; Volpato et al., 1990).

Self-categorization theory is a recent attempt to explain majority and minority influence within a single-process framework. The basic principles of the theory challenge many of those in other theories, especially the link between direct and indirect influence. It is, perhaps, too early to pass judgment on the theory as the main proponents are yet to fully articulate how the theory will be applied to majority and minority influence. However, as pointed out by Wood et al. (1994), it is difficult to evaluate self-categorization theory until research contains measures of the categorization process and only then can research establish whether this mediates attitude change.

Summary and Conclusions

The aim of this chapter has been to review current research into majority and minority influence. We have identified three chronological phases of research focusing on: (a) majority influence (pre 1970); (b) minority influence (late 1960s–1980); and (c) both majority and minority influence (1980–present). This chapter focused specifically on the latter phase of research which examined both majority and minority influence. Our review of the literature shows that there has been considerable theoretical development and we believe this is likely to continue for some time. Much of this development centers on the question of whether majority and minority influence are determined by the same or different processes. We have avoided trying to answer this question for a number of reasons (see also the meta-theoretical review by Kruglanski & Mackie, 1990). First, while we have grouped the theories into whether they advocate single- or dual-process models we could, of course, have used other classifications as there are as many differences *within* the single- and dual-process theories as there are *between* the two categories. Second, research typically examines the outcome of influence (such as attitude change) and still comparatively little research has directly examined the underlying processes. While majority and minority influence may lead to different outcomes, implying different underlying processes, the outcome itself may be moderated by another factor which covaries with source status but is not part of the causal process. For example, the finding that a majority has more direct and public influence than a minority may be due to the *same* process (e.g., psychological dependency) but the manifestation of influence is moderated by a third unrelated factor (e.g., fear of disapproval enhances majority but inhibits minority influence). Moreover, the question of single- versus dual-process models is becoming redundant given that contemporary theoretical advances are adopting a contingency perspective which rejects a source-process specific relationship and recognizes that a majority and minority can induce different processes, leading to different levels of influence. For these reasons, we believe that it is premature, and perhaps inappropriate, to conclude whether majority and minority influence are determined by similar or different processes. Instead, the goal of future research is not only to determine the *range* of processes a majority and minority can induce but also *when* these processes will occur.

In their comprehensive review of the majority and minority influence, Maass and Clark (1984) raised five main criticisms which future research should address (see also Maass et al., 1987). Fifteen years after the Maass and Clark (1984) review, which itself covered the first fifteen years of research into minority influence, it is timely to consider whether research in the intervening period has addressed these issues. The first issue raised by Maass and Clark (1984) was that nearly all the studies used paradigms in which “groups are constituted for no other reason than a one-shot experiment” (p. 434). These artificial groups differ from “normal” groups in that they have no past or anticipated future. Maass and Clark (1984) do not argue against experimental studies, rather that the over-concentration of laboratory studies had, at the time of their review, led to no field studies of minority influence. Hence, there had not been an attempt to relate findings in the laboratory to real-life situations. While there still have not been any field studies in this area (probably due to ethical considerations) the advances made in applying the findings of

basic research to real-life issues and/or to more ecologically valid situations include the following: (a) group interaction (e.g., Smith, Tindale, & Dugoni, 1996; Van Dyne & Saavedra, 1996); (b) real-life minority movements (e.g., Kelly, 1990; Pascaline, Choulot, & Gaffie, 1998; Petrillo, 1994); (c) group decision making using computers (e.g., Fischer, 1997; McLeod, Baron, Marti, & Yoon, 1997); (d) changing behaviors to smoking (e.g., Joule, Mugny, & Pérez, 1988); and (e) organizational settings (e.g., de Dreu & De Vries, 1997; Nemeth & Staw, 1989).

The second issue raised by Maass and Clark (1984) was that there had been a lack of precise definitions of key concepts, such as consistency. The literature is still hampered by a lack of clarity regarding key concepts and this confusion is likely to grow with a greater emphasis upon examining psychological processes. One problem concerns the difference between the definition of "majority" and "minority" at the theoretical level and that which is used at the research level. Typically, experimental studies have defined "majority" and "minority" status by numerical criteria, such as percentage of individuals holding each position. The over-reliance on the consensus dimension, to the neglect of the underlying norm structures gives rise to an important distinction which needs to be made in this research between normative (pro- vs. counter-attitudinal) and numerical (large vs. small) majorities and minorities.

The third issue raised by Maass and Clark (1984) concerned the status of intra- and interpersonal processes. Maass and Clark (1984) point out that when these are considered they are typically treated as post-experimental variables and analyzed separately from the influence measure, which has led to a "black-box" approach to understanding influence. It is still the case that research generally underplays the importance of intra- and interpersonal factors. Furthermore, research that does include these types of measures usually takes them after the influence, so that their status as mediators is equivocal. We hope this is one area which future research will address.

The fourth issue raised by Maass and Clark (1984) extended their fourth by pointing out that research had failed to examine whether psychological processes do, in fact, mediate influence. This is one area where research is beginning to make advances. Following developments in social cognition more generally, research in majority and minority influence is now addressing the role of mediating psychological processes. For example, the role of message elaboration (measured using thought-listing) has been examined as a mediator of majority and minority influence (e.g., Crano & Chen, 1998; Erb, Bohner, Schmaelzle, & Rank, 1998; Maass & Clark, 1983; Martin & Hewstone, 2000; Wood et al., 1996). It is our expectation that these techniques will be more widely used in this area and help to give a better understanding of the processes involved, as investigators develop a social cognition approach to majority and minority influence (see Mackie & Hunter, 1999).

Maass and Clark's (1984) fifth issue was that research had "stimulated little theoretical controversy" (p. 435). There has been considerable theoretical development since their review with several clearly defined perspectives developed for analyzing majority and minority influence. However, there have been few attempts to test between different theories (see David & Turner, 1996, for an exception) with research tending to be theory-specific and, as a consequence of this, each theory tends to have more research favoring than opposing it. This might lead the reader to conclude that there is no clear consensus

as to which theory is correct. Though it is tempting to try to compare the relative merits of one theory against another we would argue that this strategy would not be appropriate, at least not at this stage, as many of the theories presented in this chapter are complementary rather than antagonistic, and they sometimes explain influence in different kinds of settings.

Based on Maass and Clark's five criteria, research in this area has, we argue, made some progress, but still has a long way to go. None the less it has undergone, and sustained, a revolution in its perspective since the pioneering studies of social influence. From the perspective adopted in the era of dependency, the view of the minority was practically ignored. This was little better than the disparaging view of minorities provided in Shakespeare's Roman play *Coriolanus*: "What's the matter, you dissentious rogues,/ That, rubbing the poor itch of your opinion,/ Make yourselves scabs?". Thirty years after Moscovici's pioneering studies on minority influence, the very "dissentious" view of the minority remains a subject of curiosity, controversy, and sustained research. The conclusion that both majorities and minorities can, under specific circumstances, exert influence on attitudes, opinions, and judgments may seem disappointing to some. But it is surely an improvement on the myopic focus of earlier research, and the sophisticated paradigms and measures now used in this research area have led to a deeper understanding of both when and how influence is exerted by both majorities and minorities.

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CHAPTER TEN

Dynamic Social Impact and the Consolidation, Clustering, Correlation, and Continuing Diversity of Culture

Bibb Latané and Martin J. Bourgeois

Sitting at a sidewalk café in Miami's South Beach or Paris's Left Bank, one sees an amazing variety of people from all over the world. People from different neighborhoods, cities, and countries seem to differ in predictable ways – from hairstyles to clothing, from eye-glasses to smoking preferences. Yes, we are all human beings, but we are also Parisians or Paducans, Calcuttans or Californians, Venetians or Venezuelans. Regional differences in personal styles manifest themselves at virtually every scale from colleges and courtyards (Festinger, Schachter, & Back, 1950), to cities and counties (Weiss, 1994), to countries and continents (Hui, 1988). According to marketing researcher Jonathan Robin, “Tell me someone's zip code, and I can predict what they eat, drink, drive – even think” (Weiss, 1988).

A recent atlas of American consumer culture (Weiss, 1994) illustrates these regional variations. The different shades in Figure 10.1, Map 1 represent variations in the popularity of “muscle cars” across 211 consumer markets in the United States. The shades in Map 2 depict each market's response to direct mail. In both cases, darker shades represent higher rates of response. Please consider four important features of these maps: First, although not shown directly, tastes are not static; if these same maps were drawn five years earlier or later, they would be similar but not exactly the same. In fact, direct mail began and was initially most popular in the Midwest, now an area of relatively low activity. In other words, public preference is a dynamic process that becomes *consolidated*, or changes over time. We can think of the maps as snapshots of a specific moment in a continually evolving public process.

Second, note the regional *clustering*. The maps are not random distributions of shades; rather, there is a distinct order to both. Whatever the city or town, people in the

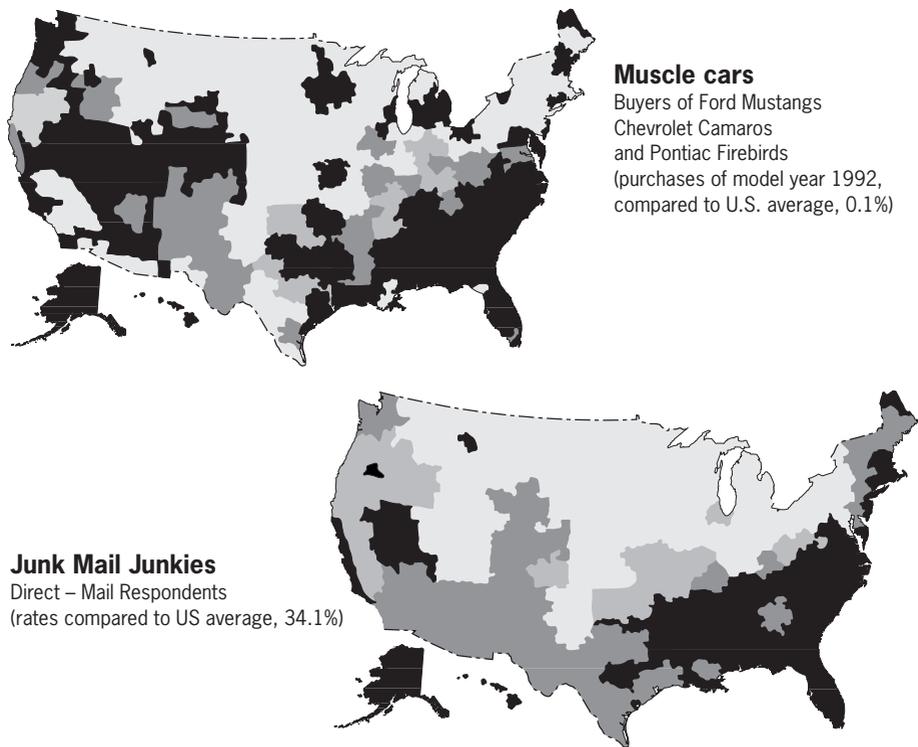


Figure 10.1. Relative popularity of muscle cars and junk mail in 211 consumer markets (Weiss, 1994).

Southeast are more likely to own Mustangs or Camaros than those in the Central states. We can predict whether a consumer market is likely to be high or low in muscle-car popularity or direct-mail response simply by which geographic region it is located within.

Third, mentally overlaying one map onto the other, notice the *correlation* between each region's favorability toward muscle cars and its response to junk mail. In fact, although there is no logical reason to expect these consumer preferences to covary, there is a substantial ($r = .68$) relationship between the two. Surprisingly, one can predict 45% of the variance in muscle-car preference by knowing a region's response to direct mail.

Finally, despite evolution and change, there is a striking degree of *continuing diversity* among the different regions. Despite pressures toward uniformity arising from widespread mobility and common exposure to mass media, national advertising campaigns, and government standardization, diversity of beliefs, values, and behavior is maintained and sometimes even enhanced.

These four phenomena – consolidation, clustering, correlation, and continuing diversity – seem to be ubiquitous aspects, not only of American consumer preferences, but also of culture in general. Maps at any scale of any part of the world would show much the same phenomena with respect to any of a wide variety of personal attributes or characteristics. Accents, food preferences, inclinations toward prejudice, styles of sex and violence, political ideologies, and religious beliefs all exhibit these characteristics, which are so widespread they may often go unnoticed. Each of us, immersed in our own local

environment, shares the illusion of being in the global majority, and we tend to underestimate the actual degree of cultural diversity in the still-wide world of the 21st century.

Culture can be taken to mean the entire set of socially transmitted beliefs, values, and practices that characterize a given society at a given time. The elements of a given culture, its pots, its poems, its prayers, its pleasures, its styles of cooking and cooperation, of altruism and aggression, all these constitute a set of socially shared ideas and habits that guide its members. Culture provides a common understanding transcending immediate individual experience, a social reality to extend and modify the physical reality of our senses. The problem is to explain how it comes about.

Cross-cultural researchers tend to adopt a top-down approach: People from different regions are different because they come from different regions. Of course, this approach is circular, and it begs the question relating to the origin of cross-cultural and subcultural differences. We prefer a bottom-up approach that conceptualizes culture as an emergent property of a complex dynamical system of people interacting with their family, friends, and coworkers over long periods of time. In other words, consolidation, clustering, correlation, and continuing diversity will be the natural outcome of social influence processes operating in local neighborhoods and geographic regions.

We suggest that culture can be seen as a self-organizing system of regionally clustered bundles or correlated sets of beliefs, values, and practices that emerge and evolve as people relate and react to one another. In this chapter, we will sketch a theory of how culture could result from the everyday interactions of spatially distributed people and describe some surprising results of an actual experiment on the development of rudimentary subcultures in small groups. Finally, we will briefly consider some implications for the relation between individuals and the social order. Our goal throughout is to employ simple social psychological principles to explain two striking characteristics of culture, regional variability and historical change.

Dynamic Social Impact Theory

Dynamic social impact theory (Latané, 1996a, 1997) draws on decades of well-documented research on individuals to explain how cultural patterns can emerge from the actions of interacting people, each responding to their local social environment. The idea that culture can be created from the bottom up is not new. In 1908, William McDougall wrote that the fundamental problem for social psychology was “to show how, given the native propensities and capacities of the individual human mind, all the complex mental life of societies is shaped by . . . and in turn reacts upon . . . the individual” (p. 18, see also Jones & Gerard, 1967). However, explicit theoretical accounts of possible processes by which this happens are rare. Dynamic social impact theory is based on a simple, quite general theory of individual influence.

Individual social impact

Social impact theory (Latané, 1981) is a well-tested metatheory of social influence. This theory is quite general, referring to any socially influenceable attribute of a person, includ-

ing not only beliefs and attitudes but also habits, moods, and lifestyles – anything, that is, that is affected by the presence or actions of other people. Social impact theory can be simply stated with a small number of propositions:

- 1 *Individuals differ, one from another.* This non-controversial assumption suggests that, because of genetic variability and individual experience, people differ with respect to many demographic, physiological, and psychological variables, including age, gender, social status, and intelligence. We are especially interested in individual differences with respect to credibility and the motivation and ability to influence other people. Social impact theory uses the term *strength* to refer to the net of all the factors that make a person influential. Strength is a characteristic of a single individual and has to do with how much power people have to influence others, how wise, articulate, and assertive they are, and how much they are listened to and imitated.
- 2 *Individuals have relatively stable locations in space.* Although the physical location of humans is not fixed, most people stay relatively close to home, with periodic short-range (e.g., traveling on the subway or by car to work) and occasional long-range (e.g., a cross-country flight or drive to a vacation spot) movements. This spatial stability implies that people will be more likely to come into contact with and thus be influenced by some people rather than others. Social impact theory uses the term *immediacy* to refer to closeness in physical or social space or lack of intervening barriers or filters. Immediacy is a characteristic of a communication channel or a relationship between individuals.
- 3 *Social impact is proportional to a multiplicative function of the strength, immediacy, and number of influence sources in a social force field.* Number here simply refers to how many people are sources and/or targets of social influence in any given situation. *Multiplicative* means that if any component is low, the resultant impact will also be low.

This straightforward proposition has been well documented and applied to a wide variety of social settings (other aspects of the theory deal with the marginally decreasing impact of increasing numbers of sources, and conditions where impact will be divided or diffused, rather than multiplied). Its predictions seem unsurprising, intuitive, even banal – individuals are more affected when they are exposed to more persuasive, more immediate, and more numerous sources of influence. These simple predictions have been supported for such different forms of social impact as conformity, obedience, stage fright, political participation, and helping behavior (Freeman, Walker, Borden, & Latané, 1976; Harkins & Latané, 1998; Jackson & Latané, 1981; Latané, 1981; Latané & Dabbs, 1976; Latané & Harkins, 1976; Latané, Liu, Nowak, Bonevento, & Zheng, 1995; Latané & Nida, 1981a, 1981b; Latané & Wolf, 1981; Latané, Williams, & Harkins, 1979; Wolf & Latané, 1985).

The theory as stated above is static, in that it predicts the amount of social influence expected to be experienced by a single individual at a given point in time, and does not take into account what effects that individual may in turn have on his or her social environment. Like most social psychological theories, it predicts a snapshot of one

person's behavior, rather than providing a moving picture of the cumulative effects of social interaction in a group.

Dynamic social impact

Dynamic social impact theory (Latané, 1996a), building upon the initial individual model, makes three additional assumptions. (1) Individual human beings, varying in strength and other attributes, are distributed in social space. (2) Each person is influenced by his or her own individual experience (here called "bias") and by the other people in proportion to a multiplicative function of their strength, immediacy, and number. (3) A person will change a given attribute if, and only if, total persuasive impact (the pressure to change to a different position) outweighs bias plus supportive impact (the pressure to maintain one's present position). This feature puts the theory into the class of modern models of nonlinear dynamics.

Dynamic social impact is taken to be the cumulative effect of the iterative, recursive influence of interacting people on each other. The problem is to predict what this will be. How can we tell what will happen in a population of people, each of whom is both source and target of social influence? Changing the unit of analysis, what will be the group consequences of individual social influence in a complex social system? Computer simulation can be used as a "derivation machine" to tell us what this complex dynamic theory predicts (Latané, 1996b; Latané, in press, Nowak, Szamrej, & Latané, 1990).

Social impact theory provides the basis for SITSIM (Nowak & Latané, 1994), a simulation program designed to trace the expected evolution of populations of people following the assumptions of social impact theory. SITSIM allows us to vary 20 factors with two to five levels of each, including such variables as population size, strength distribution, specific change rule, initial distribution of opinions, and the presence or absence of borders. Thus, SITSIM allows us to test the effects of specific theoretical assumptions, parameter values, system characteristics, and initial conditions. For a single simulation, SITSIM randomly assigns individuals a spatial location, a degree of persuasive strength, and a position with respect to one or more attributes and then computes the expected consequences over time. The simulation is repeated many times with different initial conditions, rules, and parameters to make sure that the results are not dependent on any quirks of random location or idiosyncratic assumptions.

Millions of simulation runs have discovered four phenomena to be expected in populations of people obeying the laws of social impact. These four phenomena – consolidation, clustering, correlation, and continuing diversity – should sound familiar, as they are the four ubiquitous markers of culture discussed earlier. They are extremely robust in that they hold for a wide variety of circumstances (Latané & Nowak, 1997), and they can be predicted entirely from simple social influence.

Consolidation, defined as a reduction in minority size after discussion, results from the fact that, by definition, members of a minority faction are especially exposed to contrary pressures. On average, minority members will be more likely to be surrounded by people who disagree with them, whereas majority members will tend to find themselves close to like-minded others. As long as there are no systematic factors favoring the minority posi-

tion, social influence will lead to a reduction in the size of the minority. Of course, under certain conditions, minority influence can be expected to prevail (Latané, 1996c; Latané & Bourgeois, 1996a; Latané & Wolf, 1981; Moscovici, 1976; Wolf & Latané, 1983, 1985). For example, if minority members are especially persuasive (as when truth is on their side), minority factions can be expected to grow in size. Overall, however, consolidation seems to be the rule rather than the exception.

Clustering occurs as neighbors in social space come to share the same attributes. Clustering in the real world can come about for several reasons. Obviously, people can simply move to neighborhoods where they feel more comfortable, thereby segregating themselves by race, income, ethnicity, or religion (Schelling, 1976). Less obviously, clustering will also result merely from social influence, as neighbors influence each other more than strangers and therefore come to be more similar.

Clustering is dependent on there being some sort of spatial distribution of individuals in a population, such that there are variations in immediacy. In other words, people must be located in some kind of social space in which each person has more influence on some members of the population than others (Latané & Liu, 1996; Nowak, Latané, & Lewenstein, 1995). Research in proximity, from the seminal Festinger, Schachter, and Back (1950) study to recent surveys of people ranging from rural Chinese villagers to South Florida suburbanites and electronically connected and highly mobile international social scientists shows that immediacy is a critical determinant of social impact (Latané et al., 1995; Latané & Rockloff, in press).

Correlation across different attributes may result from social influence for at least three different reasons. For one thing, attitudes on different issues may share common higher-level values and/or ideologies which become salient in the course of discussion. For example, support for the death penalty and opposition to abortion might become positively correlated in a population in which discussion is framed along conservative-liberal lines, in contrast to a population in which discussion is split along Catholic-Protestant divisions.

A second reason, suggested by Abelson (1979), results from the fact that individuals differ in persuasive strength. As those who are most persuasive are most influential to those around them on each of a variety of issues, the population as a whole may become polarized in patterns that duplicate the belief structures of these key individuals.

A third and especially intriguing reason has to do with the loss of independence that results as attitudes on different issues cluster (Latané, 1996d). As individuals interact and become similar to those around them, the effective unit of analysis is no longer the individual but a cluster of individuals, resulting in an effective reduction in degrees of freedom. The greater the overlap between clustering on the two issues, the greater the expected correlation. Thus, computer simulations in which topics are arbitrary and opinions on one cannot directly influence attitudes on another show that correlation can emerge from nothing. Although this apparent increase in correlation can be seen as a statistical artifact, it is nevertheless real in its consequences.

Finally, social influence can paradoxically be self-limiting and, despite consolidation, result in *continuing diversity*. Seldom (unless initial minorities are too small and scattered to form local clusters) will an entire population converge on the same choice. Although typically reduced in size as a result of consolidation, minority factions usually survive. This can be explained by the fact that clustering protects minorities.

Computer simulations (Latané & Morio, in press; Latané & Nowak, 1997) and theoretical analyses (Lewenstein, Nowak, & Latané, 1992) reveal two conditions required to maintain continuing diversity. First, there must be variation in persuasive strength or immediacy among the agents in a population, so that “stronger” individuals or greater distances can anchor the borders of minority clusters and shield people in the interior from counter-attitudinal pressure. Otherwise, minority clusters will erode into the majority sea. Such variation, often overlooked in theoretical analysis, obviously holds in the real world.

Second, individual attitude change processes must have some degree of nonlinearity, such that change is not simply incremental or proportionate to influence. That is, attitude change must be discrete and not a simple adoption of the neighborhood average as implicitly or explicitly assumed by classic attitude theory (e.g., Abelson, 1964; Anderson, 1971) – otherwise the system will converge to uniformity. Such nonlinear change may be the rule in the real world, especially for important or involving issues (Harton & Latané, 1997; Latané & Nowak, 1994; Liu & Latané, 1998a, 1998b).

In summary, real-world history and computer simulations show that social systems self-organize in four different respects. Consolidation comes about because minorities are usually more exposed to opposition than majorities and therefore more vulnerable to social influence. Clustering results from people being more influenced by their neighbors than they are by strangers. Correlation emerges as a result of both the perpetuation of the strength structure and the reduction of degrees of freedom that results from the emergence of overlapping clusters of originally independent attributes. And, finally, continuing diversity is maintained by these same clusters, which have the effect of making everybody think they're in the majority.

These features seem to be the inevitable result of dynamical social systems. They are extremely robust and not just some idiosyncratic quirk of a fine-tuned simulation. This nontrivial discovery is reported in major books and journals in social science and physics and illustrates that complex systems are not necessarily chaotic with small initial differences leading to big changes in the outcome. On the contrary, in self-organizing social systems such as those we describe, very different starting points lead to identical outcomes, at least at the group level.

Computer simulations and historical analyses can be very satisfying, but it would be even more convincing if these outcomes could be demonstrated in actual experimental settings. Furthermore, it would be nice to test the further implications from dynamic social impact theory that consolidation and clustering should be enhanced in proportion to social influence, correlation should be proportional to clustering, and diversity should continue even when individuals are strongly motivated to conform to the majority.

The Dynamics of Electronic Discussion

To test these predictions, we turned to electronic groups in which we could automatically control and record all episodes of interpersonal communication. We recruited 456 students by mail to participate in Florida Atlantic University's Computer Administered

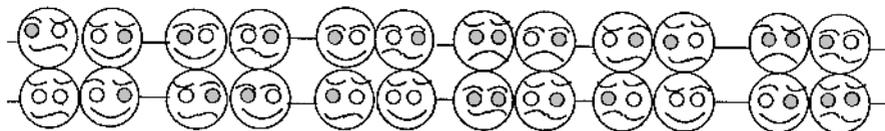


Figure 10.2. Communication links and initial perceived norms on six issues for an actual group of 24 people.

Panel Study (CAPS). Promised \$20 plus bonuses for coming to five sessions over a two and a half week period, participants averaged \$41 apiece for their efforts. Participants were organized into 19 separate 24-person groups, and communicated with other members of their group by composing short messages on a variety of experimenter-defined topics. Messages written during one session were delivered and read the following session two or five days later.

By controlling which others within each 24-person group received the messages typed in by each participant, we were able to create a social space. Each participant was randomly assigned an address within the group. Nine of the groups interacted in a one-dimensional “linear” geometry in which messages were passed to the two members on either side (with the ends wrapping around). This simple network, in which people are spread out as if along a country road, is similar to “wheel” structures from previous communication studies (Shaw, 1964). Ten groups interacted in a hierarchical “family” geometry – six four-person subgroups, each with two connections to the neighboring families on either side. This geometry was meant to capture the complex “clumpiness” of social space in the real world.

The 24 faces in Figure 10.2 represent both this spatial configuration and the positions of an actual group of 24 people on six issues before discussion. Each feature (2 brows, 2 eyes, 2 sides of mouth) corresponds to an issue, about which the person can be pro or con. Clearly, there is considerable initial disagreement on every issue, and each face seems to be a random combination of features, reflecting the fact that these choices are arbitrary and not yet open to social influence.

Varying influenceability

We chose five activities designed to vary the degree to which people were likely to influence one another:

- 1 *Conformity game.* Participants were promised a \$1 reward for predicting the position of the majority of their 24-person group on each of 6–11 uninvolved issues such as “Which mathematician (Euler or Hilbert) will the majority of your 24-person group prefer?” Topics were deliberately chosen to be neutral – we pretested each to make sure students had no systematic preference and would thus be more open to social influence.

Each person had to predict the majority preference based only on the choices of their four nearest neighbors. A rational winning strategy would be to use this limited local information to help guess the global majority preference. For example, if all four of your neighbors agree with you, stay with your previous choice, whereas if all four neighbors disagree, change. Previous research on the conformity game (Latané & L'Herrou, 1996; Latané & Bourgeois, 1996b) suggests that most people do adopt such a strategy.

The conformity game may seem somewhat artificial or contrived, but it is similar to many other social influence situations in which imitation is the goal. Although people outside the psychology laboratory are seldom if ever given cash to agree with their neighbors, they often are motivated to be relatively inconspicuous in their dress or behavior – at least until they find out what are the local norms. What you wear to a party or order to eat or drink at a business lunch may be strongly affected by what you think your friends or coworkers will choose – your goal in such situations may be simply not to differ too much from them. Thus, the conformity game can be seen as a problem in norm detection.

- 2 *Give/take game.* Because dynamic social impact theory predicts group-level self-organization to emerge on behaviors as well as beliefs, we included a simple social dilemma task. Each person within each 24-person group was given a choice on each round of whether to divide \$2 among their four nearest neighbors or take \$1 for themselves. Of course, this is a classic social dilemma; the more people who act unselfishly (i.e., by giving 50 cents to each of their neighbors), the better off the group as a whole will be, but acting in one's own self-interest (i.e., by taking a dollar) will always pay off individually. Based on previous research with two-person dilemma games (e.g., Dawes, 1991; Komorita, 1965), we thought people's decisions to give or take would be influenced by the previous decisions of others. If so, choices should consolidate and become regionally clustered as local norms of cooperating versus competing emerge from the local interactions of the participants (Glance & Huberman, 1994).
- 3 *Political/Social attitudes.* Participants were asked to rate their agreement with a series of statements representing a variety of judgments of human rights violations (H), political policies (P), social issues (S), and items from the Authoritarian Personality Inventory (F). In addition to stating their opinions on each issue on a six-point scale (from -3, definitely disagree to +3, definitely agree), group members also typed in a rationale (up to two lines) for their choices. On each subsequent session, group members could read the opinions of four neighbors before having a chance to revise their own.

Unlike the conformity or give/take games, pressures to uniformity on this task should result primarily from needs to create or conform to a group consensus or social reality (Festinger et al., 1950). Whether through desires to persuade others, change themselves, or avoid the consequences of deviance (Festinger, 1950; Festinger & Thibaut, 1951; Schachter, 1951), people often come to agreement in discussion groups, even without explicit reward (Levine, 1980). We expected people to be somewhat but not massively responsive to the opinions of their neighbors on these political and social issues.

- 4 *Personality self-descriptions.* Personality traits are generally thought to be more stable, enduring, and genetically determined than attitudes (but see Tesser, 1993), but there is reason to think they may be subject to social influence. Western cultures seem to produce individualistic, self-oriented, competitive people compared to the communal, family-oriented, and cooperative people characteristic of Eastern cultures (Triandis, Brislin, & Hui, 1988).

The personality discussion forum asked people to describe themselves in terms of 10 items drawn from the NEO-FFI version of the Big Five personality inventory, using a six-point scale to indicate their agreement with each statement (e.g., “I often feel tense and nervous”) and giving a two-line reason or example. On subsequent rounds, each person was shown how their neighbors answered each question and why, and then could revise their own answers. Unlike the political/social issues, any pressures toward agreement probably result not so much from needs for social reality as from opportunities for social comparison (“These other four people seem to be quite tense and nervous; maybe I am too”).

- 5 *Deviation game.* Instead of being rewarded for adopting the majority choice as in the conformity game, participants in the deviation game were paid \$1 per topic for being in the *minority* of their 24-person group, giving them no incentive to become similar to their neighbors. Again, each had to infer the global preference from the previous choices of their four nearest neighbors, but now should be motivated to change to the extent their neighbors *agree* with them.

Individual change

Every session after the first, each person discovered for each item how their four nearest neighbors responded on the previous round. Figure 10.3 shows the probability that individuals would change their choice as a function of the proportion of these messages that opposed their own position. Change in the conformity and deviation games was defined as moving from one choice to the other (e.g., from Euler to Hilbert); in the give/take game, as a switch from giving to taking or vice versa. For political/social attitudes and personality self-descriptions, change was defined conservatively, as a movement from agreeing to disagreeing or vice versa (incremental changes in degree but not direction, e.g., from -3 to -2 , were not coded as opinion changes).

Social influence was highest in the conformity game. Fewer than 5% of participants changed if at least half of their correspondents agreed with their previous choice. If in a local minority, however, they conformed to their neighbors' choices two-thirds of the time. Even so, individual biases were strong and 25% maintained their initial positions in the face of unanimous opposition.

Choices on the give/take game were also highly subject to social influence. When confronted by a majority who adopted the opposite strategy on the previous round, people changed their own strategy two-thirds of the time. There was an interesting asymmetry – givers confronted by a majority of takers were more likely to change than were takers confronted by givers, showing a role for self-interest as well as social influence.

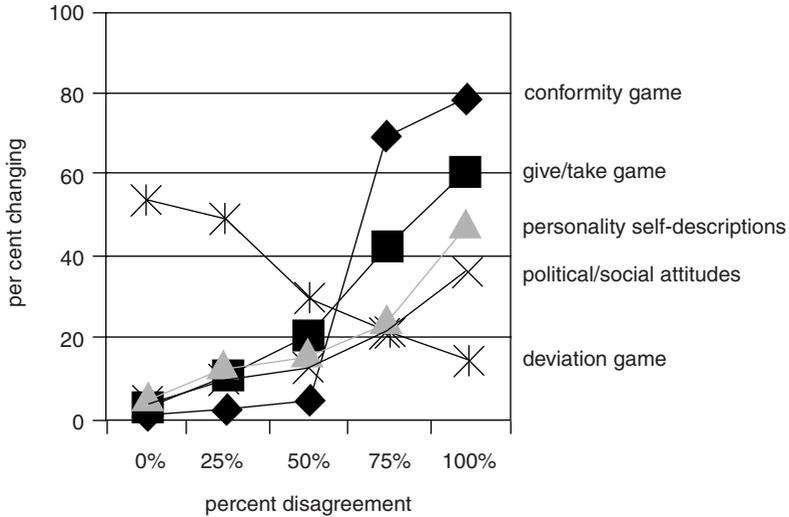


Figure 10.3. Individual change as a function of topic type and local disagreement.

People responded to their neighbor's arguments with respect to the political/social issues – over one-third changing with an opposing majority compared to the 10% who changed after being exposed to disagreement from one or two neighbors. Even so, change was relatively infrequent – even when all four correspondents disagreed, participants held to their previous opinion 62% of the time.

People were surprisingly influenced by the choices of their neighbors on the personality self-description items, being even more affected by knowing whether their neighbors agreed with these self-referential statements than with attitudinal positions. Participants changed their responses to Big 5 items fully half the time when all four neighbors gave an opposite self-description.

Finally, change in the deviation game was inversely related to the amount of opposition, with people being *more* likely to change to the extent their neighbors agreed with them.

These differences in degree of social influence should be reflected by corresponding differences in the resulting emergence of consolidation, clustering, and correlation. Specifically, these forms of self-organization should be greater for the conformity and give/take games than for personality self-descriptions and political/social attitudes, and should completely disappear for the deviation game.

Results

The study evolved over four semesters, and there were variations in the number and content of topics within each type. Therefore, statistical analyses were conducted by computing the average degree of consolidation, clustering, and correlation across all issues of a given type for each of the 19 independent groups before calculating planned compar-

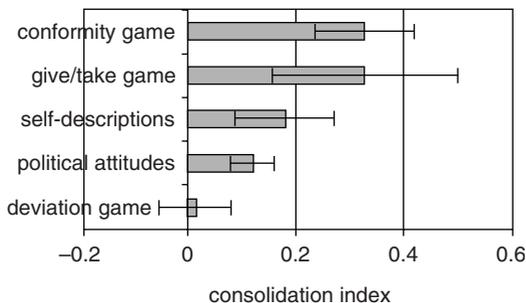


Figure 10.4. Consolidation as a function of topic type.

isons. This conservative strategy (Rosenthal & Rosnow, 1991) underestimates the statistical significance of the observed group phenomena (e.g., if a given group showed positive clustering on all six conformity game issues, the average clustering score does not nearly describe how unlikely this would be by chance). Most of our results were associated with extremely large effect sizes (all reported results being statistically significant), so this loss is not serious.

Consolidation, or the tendency for the initially preferred choice, opinion, or strategy to become more prevalent as a result of discussion, was commonplace. Consolidation represents a reduction in minority size and can be calculated by the formula $[1 - (\text{size of final minority}/\text{size of initial minority})]$ (Latané, Nowak, & Liu, 1994). Figure 10.4 shows the average consolidation indices across groups broken down by topic type, with 95% confidence limits superimposed.

All 19 groups played the conformity game, with each group discussing between 6 and 11 topics. Every single group exhibited positive consolidation and minority factions on average lost one-third of their members. Fourteen groups played the give/take game; 12 starting with a majority of takers, and the other two with a majority of givers. In every group but two, whichever choice was in the initial majority became more common over the five rounds; on average, minority factions again lost 33% of their members as a result of people changing their strategies to agree with their neighbors.

All nine of the groups that shared personality self-descriptions showed positive consolidation over the 10 items they compared, and minority factions were reduced by 19%. Although people were not very responsive to social influence for the 8–12 political/social issues, minority factions within each of the 19 groups got smaller, shrinking by 12% after five discussion rounds. Finally, among the 14 groups playing the deviation game (each using either two or three topics), there was absolutely no sign of consolidation, with a net change of less than 1% in the size of the minority.

Overall, then, the tendency for minority factions to be reduced in size was highest in the conformity and the give/take games, significant to a lesser extent in the personality and political/social discussions, and nonexistent in the deviation game. This ordering corresponds perfectly to the relative degree of individual social influence characteristic of each topic type.

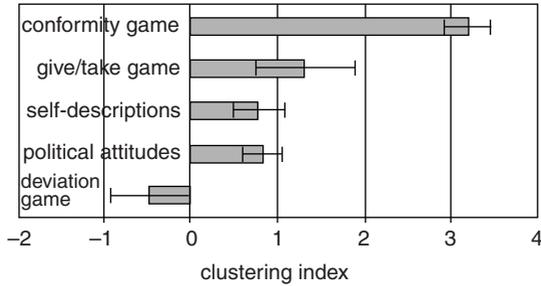


Figure 10.5. Clustering as a function of topic type.

Clustering was also consistent. The total number of opposing messages within a group after an exchange can be used to create a clustering index by comparing it to the total oppositions to be expected from all possible permutations of 24-person groups with the same minority size to calculate the probability of as few or fewer oppositions by chance. This probability can in turn be expressed as a z -score which can be averaged across issues and groups. This procedure is similar in logic to a runs test.

Before discussion, there were essentially random levels of clustering within the discussion groups for each topic type, as people were no more or less likely than chance to agree with their neighbors. Figure 10.5 shows the average clustering after discussion.

On conformity game items, each of the 19 groups showed substantial increases in the level of clustering over the five discussion rounds and final z -scores averaged 3.20. Decisions on the give/take game also clustered significantly, although not so greatly, with 12 of 14 groups showing an increase. People became more similar to their neighbors in each of the nine groups that compared personality self-descriptions and in each of the 19 groups on the political/social discussion items. However, the final average clustering index for these three topic types, although significantly greater than zero, was noticeably smaller than for the conformity game.

Table 10.1 lists the 22 items used in the political/social discussion forum, along with indices of social influence, size of initial minority, and final clustering. Clustering was positive for 21 of the 22 items and significant for 14. Interestingly, the six items with the lowest z -scores all were among the seven with initial minorities or social influence scores less than .25.

Finally, there was virtually no net change in the level of clustering after discussion for the 14 groups playing the deviation game, and in many cases these groups exhibited anti-clustering, in which people become less similar to their neighbors than expected by chance.

In summary, clustering is a powerful emergent force, characterizing virtually every group and issue for which there was positive social influence, and it is exhibited when and to the degree predicted by dynamic social impact theory. It characterizes both important and trivial issues, over a wide range of susceptibility to social influence.

Correlation. Perhaps the most surprising prediction of DSIT is that positions on previously unrelated issues can become correlated, not just because people discover hidden

Table 10.1. Clustering of Political/Social Discussion Topics as a Function of Social Influence and Initial Minority

<i>Discussion topic</i>	<i>Social influence</i>	<i>Initial minority</i>	<i>Clustering index</i>
A few strong leaders could make this country better than all the laws and talk F	.42	.39	1.82***
Someone with a contagious disease is sent by force to the hospital to be cured H	.71	.38	1.73***
Law and order is more important than letting every kook have his say P	.58	.39	1.54***
Most people who don't get ahead just don't have enough will power F	.46	.40	1.42**
The police are generally corrupt and brutal P	.57	.41	1.32**
Government attempts to prevent marijuana are just about as stupid as prohibition P	.54	.38	1.32**
People should be allowed to hold demonstrations in the street without interference P	.42	.43	1.28**
What young people need most of all is strict discipline by their parents F	.69	.31	1.18**
Affirmative action in university admissions S	.29	.27	1.15**
U.S. military intervention in crises within foreign countries S	.28	.46	1.13*
Legalizing marijuana S	.37	.45	1.08*
Someone kills a robber that had entered into his/her house H	.66	.33	1.07*
A government requires that women cover their faces when going into the street H	.47	.22	1.07*
Military training is unnatural and has a tendency to warp people P	.56	.38	.92*
A wife won't let her husband go out without her H	.46	.37	.60
Homosexual couples as adoptive parents S	.57	.40	.49
Someone is declared insane and is locked up. He protests but no one listens H	.41	.22	.43
An insult to your honor should not be forgotten F	.19	.38	.38
Lowering the current drinking age in Florida S	.19	.36	.29
Smoking restrictions in public facilities S	.91	.06	.12
Abusing of children is an unforgivable infringement of personal liberties P	.22	.42	.08
Some parents force their children to quit school H	.43	.11	-.19

* $p < .05$. ** $p < .01$, *** $p < .001$. p values are based on the meta-analytic combination of z -scores from independent groups.

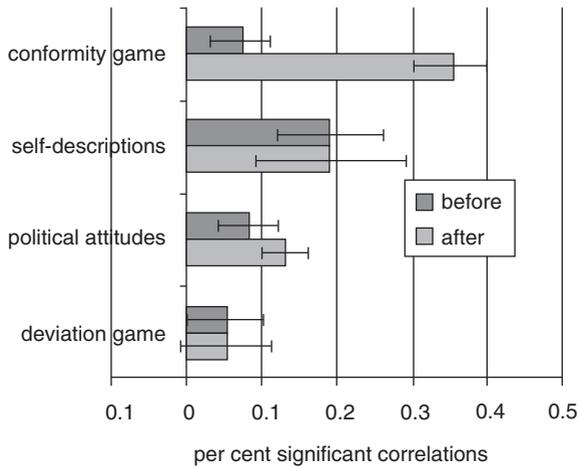


Figure 10.6. Correlation as a function of topic type.

relationships between them, but simply from the loss of independence due to clustering. To measure the degree of increased correlation, we counted, separately for each independent 24-person group, the number of statistically significant ($r > .40$ for $p = .05$, $df = 23$) correlation coefficients among all possible combinations of issues of each type before and after discussion (we could not assess correlation for the give/take game because each group played only once) (see Figure 10.6).

Before discussion, only 7% of all the possible correlations among the 6–11 conformity game items in each group were significant, just above what one would expect by chance. As a result of the clustering induced by discussion, the number of significant correlations among the conformity game responses rose in each of the 19 groups. The increase was dramatic – after sharing perceptions of group preferences, 35% of the correlations were significant and their average absolute value rose from .17 to .28. These correlations, which ranged up to .83, are simply a result of dynamic social influence separately applied to each of the issues, and presumably do not represent the emergence of anything like an ideology.

Although the political/social items were largely drawn from questionnaires designed to measure general liberal/conservative attitudes, there was surprisingly little correlation among them before discussion, with only 8% of all possible correlation coefficients being significant at the .05 level. Discussion increased the proportion of significant correlations to 14% and this increase occurred for 14 of the 19 groups ($p = .03$). The smaller increase in correlation resulting from communication with respect to political/social rather than conformity game issues can be explained simply by the fact that there was less social influence and less clustering for these items. This pattern of results is consistent with the idea that correlation is determined by the degree of clustering, and not by implicit or latent ideological connections among the issues (Lavine & Latané, 1996). In fact, the average within-group correlation (across issues) between post-discussion clustering and correlation is .30 for conformity game items and .47 for political/social issues.

Self-description items drawn from the Big 5 personality questionnaire showed substantial correlation before discussion with 19% of the possible correlations being significant. However, although there was as much of an increase in clustering on these items as for the political/social issues, there was no tendency for correlation among the items to increase. It may be that the initial correlation structure somehow constrained the tendency for clustering to increase correlation among items. At any rate, there was no relationship across groups between the degree of post-discussion clustering and correlation for personality self-descriptions, unlike political/social and conformity game issues.

Finally, for the deviation game, in which people strove to be dissimilar from their neighbors, only 5% of all possible correlations were significant even after discussion. Again, it appears that clustering, in the absence of a pre-existing correlation structure, is a necessary and sufficient condition for the emergence of correlation.

Continuing diversity. The final implication of dynamic social impact theory is that clustering will limit the amount of consolidation within each group so that, even if strongly motivated to achieve consensus, people in minority clusters will not be affected by the global majority.

Fewer than 4% of the 182 cases in which a group discussed a political/social topic reached total overall agreement. Furthermore, none of the 14 cases where groups played the give/take game or the 72 instances where they shared personality self-descriptions or the 37 instances where they discussed deviation game topics reached unanimous consensus – diversity prevailed in every case. Even in the conformity game, where people were paid for detecting the majority preference, consensus was achieved by only 7% of the 159 cases, and people failed to earn the reward on 43% of their 3,816 opportunities – particularly poor performance, as they were guaranteed at least a 50% chance of winning by the rules of the game.

Summary

These results extend previous research with the conformity game (Latané & L'Herrou, 1996; Latané & Bourgeois, 1996b) and electronic juries (Jackson, Bourgeois, & Latané, under review) and suggest that consolidation, clustering, and continuing diversity occur, not only when people are striving to attain consensus or agreement with the majority, but also when they are simply discussing political and social issues. Because the rate of opinion change is lower when discussing such issues, the degree of consolidation and clustering, though still pronounced, is reduced. The striking implication that initially unrelated opinions will become correlated as a result of discussion was also confirmed for both conformity game and political/social issues. Thus, computer-mediated discussion groups provide strong confirmation of the emergence of all four forms of self-organization – consolidation, clustering, correlation, and continuing diversity – predicted by dynamic social impact theory.

Furthermore, the degree of consolidation, clustering, and correlation was proportional to the degree to which topic types were subject to social influence, greatest for the conformity and give/take games, significant for personality self-descriptions and the politi-

Table 10.2. Social Self-Organization as a Function of Influenceability

<i>Topic type</i>	<i># of groups</i>	<i>Influence index</i>	<i>Consolidation</i>	<i>Final clustering</i>	<i>Pre/Post % significant correlations</i>
Conformity game	19	.72	33%***	3.20***	7% / 35%***
Give/Take game	14	.45	33%***	1.35***	n.a.
Personality self-descriptions	9	.27	18%***	.80***	19% / 19%
Political/Social attitudes	19	.22	12%***	.84***	8% / 14%*
Deviation game	14	-.32	0%	-.46	5% / 5%

* $p < .05$, ** $p < .01$, *** $p < .001$, by t -test. p values are based on independent groups.

cal/social attitudes, not at all for the deviation game (Table 10.2). This result suggests that dynamic social impact theory may be useful, not only for drawing our attention to important group-level phenomena, but also for helping to predict their magnitude and extent. In fact, Latané and Bourgeois (in press), entering the present data into a series of computer simulations, have shown that the theory can successfully predict the degree of consolidation and clustering, not only for different topic types according to the degree they are susceptible to social influence, but also for different topics and different groups according to the initial random distributions of individual choices.

Clustering in these electronic groups takes place in electronic space, and the groups are small and short-lived, existing for fewer than three weeks. However, we believe the basic dynamics of consolidation, clustering, and correlation are the same as for society as a whole.

Problem of Scale

The results of these small-group studies are very satisfying, but they hardly yet explain self-organization at the level of society. The problem is not that small groups can't represent larger populations – quite the contrary. Since these groups are borderless and represent geometries rather than irregular structures, there is no reason why our findings with 24-person groups would not be equally powerful with 240, 240,000, or even 240 million people. The problem is that the processes we have detailed only produce small clusters, curdles rather than continents, much smaller than typical of the outside society. How can

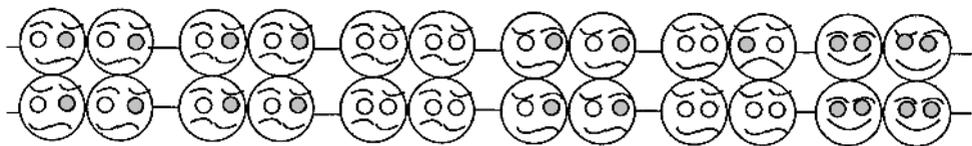


Figure 10.7. Post-discussion norm perceptions for the same actual group. Note the common within-family beliefs.

we scale them up? Are there additional processes which might amplify the scale of social self-organization?

An obvious candidate is social identity, as the emergence of clusters from dynamic social impact leads to the development of subgroups of people with similar attributes. Figure 10.7 shows the post-discussion opinions of the group of people from Figure 10.2 on six conformity game issues. To see how discussion induced a high degree of clustering on any given topic, see how each particular feature (e.g., the right eye, which here indicates which of two architects each person thought the group preferred) has become more similar within than between subgroups. But there is also a remarkable degree of similarity across the six different topics within each family. In other words, family members now look alike. Note especially the second, third, and fourth subgroups from the left.

Clustering and correlation have produced strong “family resemblances” within most subgroups. Although not visible to participants in the present paradigm, such local norms may become identifiable to their members, and form the basis for friendship choices, stereotypes, in- versus outgroup feelings, and all the other features of our social world. Once such macroscopic phenomena begin to emerge from microlevel processes, they can create further feedback leading to the emergence of such phenomena as social representations and social identities.

Electronic Groups as Dynamical Systems

It is a characteristic of dynamical systems that relatively stable new behavior patterns can emerge from lower level system properties, without any outside higher level influence required to explain the emergent regularities (Casti, 1994; Holland, 1995; Kauffman, 1995; Lewin, 1992; Waldrop, 1992). For example, as the different components of a walking leg interact, the possible movements of each component part are constrained by the interconnections with other parts of the leg (Baron, Amazeen, & Beek, 1994). As systems get larger and more interconnected, the degrees of freedom for each component part are reduced. Similarly, as people within our electronic groups discuss issues, they become more interdependent with their neighbors, leading to an analogous reduction in degrees of freedom.

We can think of consolidation, clustering, and correlation as order parameters (Turvey, 1990), quantitative measures that reflect the coordination, coherence, and cooperativity among the people within a group. From essentially zero starting values, increases in these

indices reflect the emergence of self-organization within each group. Order parameters are thought to vary as a function of control parameters, or outside variables that affect the lower level behavior of agents in a dynamical system. In that sense, individual pressure to change can be considered a control parameter in this study. As people become increasingly likely to adopt the attributes of those around them, increases are expected in the order parameters of consolidation, clustering, and correlation.

Discussions within our 19 electronic villages consistently led to group-level self-organization that confirmed the predictions of dynamic social impact theory. From initially random distributions, opinions and choices of group members consolidated and became regionally clustered, correlations across issues increased, and diversity persisted. These phenomena emerged when and to the degree predicted by individual social impact. There were no higher order group processes causing these forms of organization. In fact, participants knew nothing about the communication geometries involved, they merely knew that they were sharing messages with four other members of a 24-person group.

Is there something unique about computer-mediated communication that would qualify our conclusions about dynamic social impact? That is, would face-to-face groups discussing similar issues within subgroups show the same tendencies toward self-organization? In fact, it seems that if anything, people are less vulnerable to normative influence when discussing issues by computer (Sproull & Kiesler, 1991); to the extent that this is true, we may expect even more individual influence within face-to-face groups and hence more group-level self-organization. Studies in which college students discuss quiz questions with those seated around them have shown evidence of consolidation, clustering, correlation, and continuing diversity of opinions (Harton, Green, Jackson, & Latané, 1998; Rockloff & Latané, 1996).

Social Representations

Moscovici (1961, 1984) has introduced the influential concept of *social representation* to explain the evolution of culture and the “invention of society.” The patterns of beliefs and behaviors formed by dynamic social impact can be considered rudimentary social representations in four respects: (1) they apply to ideas, values, practices, and any other socially influenceable attributes of a person; (2) they are collectively realized, regionally differentiated, evolving patterns of agreement and disagreement in which different people possess different aspects of the complex whole; (3) they emerge from the everyday interactions of ordinary human beings, each following simple psychological laws; and (4) they can acquire iconic form allowing them to become the means as well as the objects of social influence. The two theories complement each other nicely (Huguet & Latané, 1996; Huguet, Latané, & Bourgeois, 1998; Schaller & Latané, 1996), with social impact theory providing a mechanism for explaining the spread of social representations and the persistence of diversity, a clear criterion for deciding whether a socially shared set of attitudes is a social representation or simply a common response to compelling circumstance, and criteria for identifying the group(s) for which a social representation exists.

Conclusion

Dynamic social impact theory views culture as a continuing human creation to which everyone contributes. Based on the psychology of the individual human being living in a social world, dynamic social impact theory assumes that culture is generated from the bottom up in the form of inductive combinations of culture elements that become spatially distributed social representations. Thus, the theory assures a central role for social psychology in solving the master problem of social science, McDougall's task of showing how individuals create and are shaped by society.

The four Cs of group dynamics can be understood as the predictable outcomes of non-linear systems of spatially distributed individuals influencing each other in proportion to their strength, immediacy, and number. Like other self-organizing systems, groups of all sizes respond in complex, non-intuitive ways to external and structural change, but often produce emergent factions or subcultures with an apparent life of their own. Subcultures can be seen as temporally evolving, regionally clustered, partially correlated sets of socially influenced but individual beliefs, values, and behaviors.

Although we hope this theory may lead to understanding the sociological, political, and economic phenomena that go together to create culture, it will probably be best suited to explaining the form rather than the content of historical, cultural, and regional differences, nothing in the theory telling us what the nature of a particular culture will be. We do not have space to discuss the role of individual experiences and interests, except to say that according to this theory, there should be two kinds of cultural universals, those originating in the nature and experience of individuals ("bias") and the macrolevel emergent consequences of their interaction (dynamic self-organization).

Dynamic social impact theory sees human society as a collection of subcultures, an organic changing entity responsive to, and possibly controllable through, the technology that determines the shape, the geometry of social space, the technology of social interaction. Thus, dynamic social impact theory may help us understand the ways in which social mobility and technological change will affect the existence and nature of continuing diversity in both small and large groups.

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CHAPTER ELEVEN

Attitudes, Norms, and Social Groups

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The concept of the attitude has had a long and venerable history in social psychology. In his seminal chapter in the original *Handbook of Social Psychology*, Gordon Allport (1935) called the attitude, “probably the most distinctive and indispensable concept in contemporary American social psychology.” In all probability, it still is. At the very least, it is the most widely referenced concept in social psychology as the twentieth century draws to a close.

It is interesting that it was not always so. According to Allport, before the attitude concept gained acceptance, there was no agreed upon way to represent preferences, sentiments, and values. But the growth of the attitude concept gave social psychologists a way to discuss and measure such preferences. Cantril (1934) defined attitude as “a more or less permanently enduring state of readiness of mental organization which predisposes an individual to react in a characteristic way to any object or situation with which it is related.” Current students of attitudes have generally conceived of attitudes in much the same way. Petty and Cacioppo (1996), for example, refer to attitudes as “a general and enduring positive or negative feeling about some person, object, or issue” (p. 7).

Despite the similarity in definitions of attitudes during the past seven decades, there have been interesting and subtle differences in the direction of research. In Allport’s view, one of the benefits of the attitude concept was that it allowed researchers not only to examine the preferences of individuals, but also the dispositions and preferences of social groups and cultures. For Allport, the study of attitudes provided a meeting ground for the study of groups and individuals. In that vein, Festinger (1950) emphasized the integral interdependence of individual and group by noting, “an attitude is correct, valid, and proper to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes” (p. 272).

During the intervening decades, the focus of attitude research has shifted from its co-emphasis on individuals and groups to a predominant interest in the individual. With a few notable exceptions, attitude research has emphasized internal processes and has largely ignored the influence of groups on attitude formation and change. Consequently, it goes

almost unnoticed that Petty and Cacioppo's (1996) definition of attitudes exclusively addresses the feeling of an individual toward a person, issue, or thing and does not refer to the social situation or social group.

In this chapter we will review research and theory that suggests that the social groups to which we belong play a major role in attitude formation, attitude-behavior consistency, and attitude change. We begin by examining the ways in which groups influence the formation of attitudes. We then look at the link between attitudes and behavior, paying special attention to the importance of reference groups in promoting attitude-behavior consistency. Finally, we explore two theories of attitude change: group polarization and cognitive dissonance. While polarization has always been studied from a "group" perspective, cognitive dissonance has primarily been studied at the individual level. However, both past and recent research can give us some insight into the ways in which group membership may play an important role in attitude change.

One recurring theme throughout this chapter is the idea that groups have the largest influence on attitudes when group identities are important, relevant, and salient. Many of the current models of social cognition place an emphasis on the fact that we often will act upon whatever attitude, information, or goal happens to be accessible at a particular moment in time. Like other types of cognitive structures, when group identities have been activated, they can influence how we form, act upon, and change our attitudes. This is particularly true when the group is important to us, and when group membership is relevant to the attitudinal issue.

Attitude Formation

People often seek information about objective reality by examining the actions of others. At other times people are concerned about being accepted by others, and comply with group norms in order to obtain social approval. These two forms of social influence are typically referred to as informational and normative social influence, respectively (Deutsch & Gerard, 1955). In this section, we will examine how both informational and normative social influence affect the ways in which people form attitudes. We will also explore the ways in which the salience of group norms and social identities can influence attitude formation.

Informational social influence

In situations in which the correct attitude or behavior is difficult to determine, people can look to those around them for clues as to what they should think and do. For instance, if people want to know if the ocean water is warm enough to go swimming, they might look to see if any other people are in the water. If people are uncertain about a particular attitudinal issue, they might behave in the same way. They could examine the attitudes of those around them, in order to learn what other people think. Hence, this type of influence is known as informational social influence.

Sherif (1935) demonstrated that in ambiguous situations, people look to the opinions of others for information. Sherif asked participants in a dark room to estimate the distance a small light moved. Due to a visual phenomenon known as the autokinetic effect, most people perceived the light to be moving, even though it remained stationary. At first, individuals' estimates of the distance the light moved varied. However, after repeated trials in which the participants heard everyone's responses, all of the participants in a given group began to make similar distance estimates.

Participants in Sherif's (1935) experiment apparently internalized the information they received from the other group members. When asked to judge the movement of the light in private, participants still responded with answers that matched the previous group consensus. This suggests that in cases where people are uncertain about what attitudes to hold, individuals may influence each other through their actions and responses until most group members hold similar attitudes.

The nature of the group: Ingroups and outgroups. The nature of the group providing the information influences whether individuals will accept other group members' opinions. In a replication of Sherif's (1935) experiment, Abrams and his colleagues (Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990) manipulated the degree to which participants saw themselves as members of a group. They placed confederates (outgroup members) in each condition, and then varied the distinction between ingroup and outgroup. The first group performed the autokinetic task anonymously in the dark, as had Sherif's participants. A second group received a label to distinguish them from the subgroup of confederates, and the third group both received a distinguishing label and performed a prior task with their own subgroup.

Abrams et al. (1990) found that participants' responses were less likely to converge with the responses of the confederates as the salience of their status as a distinct group increased. Conformity was lowest when the participants had previously distinguished themselves from the outgroup (confederates) by performing a task together. Conformity was highest when the distinction between ingroup and outgroup was not readily apparent. These results suggest that although groups can provide information people use to form attitudes, people are more likely to accept this information from ingroup members.

Normative social influence

The second type of influence that groups can provide is normative social influence. The most common example of normative influence is Asch's (1951, 1956) line-length experiments. In these experiments, participants were asked to judge the length of lines, after hearing responses from several other individuals. Occasionally, the other individuals (who were all confederates of the experimenter) would give an incorrect response. Sometimes this normative pressure led participants to agree with the incorrect estimates. Later experiments (e.g., Deutsch & Gerard, 1955) found that when participants gave their answers privately, they were much less likely to agree with the confederates.

Although the Asch experiment does not deal directly with attitude formation, experiments with similar designs have investigated the role of normative influence in the for-

mation of attitudes toward objects as diverse as paintings (Argyle, 1957), flavors (Kelley & Lamb, 1957), and people (Raven, 1959). For instance, Raven (1959) asked participants to form an attitude about a juvenile delinquent named “Johnny Rocco.” Although participants tended to feel that Johnny should be treated leniently, they were told that the majority of group members advocated harsh punishment. As in the Asch (1956) study, participants were more likely to conform to the judgments of other group members when their responses were public rather than private, indicating normative social influence as the basis for the attitude.

Ingroups and outgroups revisited. As with informational influence, research has shown that normative influence is also dependent on the relationship people have with the group providing the norm. Abrams et al. (1990) replicated the Asch (1956) experiment using a straightforward ingroup, outgroup manipulation. When the confederates were members of the ingroup, the participants showed the usual pattern: They were more likely to conform publicly than privately. However, when the confederates were outgroup members, participants were more likely to conform privately than publicly. Although people may alter their behavior to publicly match ingroup norms, outgroup norms are more likely to influence private attitudes rather than public behavior.

Salience of group norms and social identities

When are groups most likely to influence attitudes? Psychologists working in the tradition of social identity and self-categorization theory have proposed that when a particular social identity is made salient, people will categorize themselves in terms of that social category (e.g., Turner, 1991). As Terry and Hogg (1996) point out, “When social identity is salient . . . a person’s feelings and actions are guided more by group prototypes and norms than by personal factors” (p. 790). When people see themselves as group members, group norms will be more likely to influence the ways in which they form, act upon, and change their attitudes.

Groups can provide information and exert normative pressures on individuals, which will influence attitude formation. The influence of groups will vary, based upon whether people categorize themselves as a member of the group, or as an outsider. Groups will have the largest influence on attitude formation when group identity is salient. Yet even after attitudes have been formed, groups can influence the likelihood that people will act upon those attitudes.

Attitude–Behavior Consistency

How predictive are attitudes in determining behavior? In an early review of empirical research, Wicker (1969) called into question the assumption that there is a straightforward and direct relationship between attitudes and behavior. Wicker (1969) argued instead that the relationship between attitudes and behaviors was weak. The lack of empir-

ical support for a simple relationship between attitudes and behavior led theorists to look more closely at the attitude–behavior relation in an attempt to develop better behavioral predictions.

Research since Wicker's (1969) review has pointed to the importance of social norms as well as personal attitudes in determining whether people will act in accordance with their attitudes. In this section we will discuss both the automatic and more deliberate ways in which social norms can influence the attitude–behavior relationship. Because they have different perspectives on the role of group norms in the attitude–behavior relationship, we will examine both the motivation and opportunity as determinants (MODE) model and the theory of planned behavior (Ajzen, 1991).

Attitudes can affect behavior both automatically and deliberately. One area of research that has investigated this dichotomy is the MODE model. Research conducted under the MODE model (Fazio, 1986, 1990, 1999) has helped to outline the two processes through which attitudes lead to behavior. According to the model, under some conditions people's behavior is spontaneously or automatically guided by their attitudes, while under other conditions people engage in effortful and deliberate thought about their attitudes when forming behavioral intentions.

Automatic processing

Fazio argues that spontaneous or automatic attitude–behavior links occur when people hold highly accessible attitudes toward certain targets. Highly accessible attitudes spontaneously guide behavior in part because they influence people's perceptions of a particular target or situation. For instance, if a teacher holds a positive attitude toward a student, the teacher will likely interpret the student's behavior selectively, and in line with the positive attitude. This selective attention to attitude-consistent information will lead to attitude-consistent behavior. According to Fazio (1990; Fazio & Towles-Schwen, 1999), people are more likely to exhibit attitude–behavior consistency when their attitudes are highly accessible and thus can guide behavior spontaneously.

Although the emphasis of the MODE model is on how attitudes guide behavior, it also acknowledges that social norms play a role in whether people will behave in attitude-consistent ways. Like attitudes, the influence of norms can be either automatic or conscious. For example, research has shown that the accessibility of norms from different reference groups can spontaneously influence people's perceptions of attitude objects. For instance, Baldwin and Holmes (1987) showed that norms of accessible reference groups influenced participants' reactions to a description of sexual permissiveness. In their study, participants were asked to visualize either the faces of two campus friends or the faces of two older family members. Participants were then asked to evaluate a sexually permissive passage as part of an allegedly unrelated task. Those who had visualized the faces of campus friends evaluated the description more positively than participants who had visualized the faces of two older family members. Apparently, the different reference groups brought to mind norms that the participants then used to evaluate the passage. The MODE model argues that people are more likely to exhibit attitude–behavior consistency when their attitudes are both highly accessible and in line with accessible social norms.

Deliberate processing: The theory of planned behavior

According to the MODE model (Fazio, 1990; Fazio & Towles-Schwen, 1999), other types of situations lead people to engage in effortful and deliberate reflection upon their attitudes when formulating behavioral intentions. A student making a difficult decision about which graduate school to attend would likely engage in this more effortful and deliberate processing mode, and would thus be likely to scrutinize his or her attitudes before making a decision. It is when people formulate behavioral intentions through effortful reflection that the relationship between a person's personal attitude and his or her behavior is not always straightforward. Although the MODE model acknowledges that in some situations people scrutinize their attitudes, research conducted under the MODE model does not address the role of deliberate processing in the attitude-behavior relationship.

The theory of planned behavior (Ajzen, 1991, see also its predecessor, the theory of reasoned action, Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), on the other hand, was designed to describe the relationship between attitudes and behaviors in situations in which deliberate, effortful processing is required. The theory of planned behavior maintains that behavioral intentions, rather than attitudes, directly influence behavior. According to the model, behavioral intentions comprise both personal factors (i.e., the person's attitude and his or her perceived level of behavioral control) and social factors (i.e., social norms). These two types of factors are hypothesized to exert psychologically independent influences on the behavioral intentions that people form with regard to certain situations.

More specifically, the theory of planned behavior posits that behavioral intentions are determined by three types of beliefs: Personal beliefs about the consequences of a behavior (the person's "attitude"), personal beliefs about control ("perceived behavioral control"), and social, or normative, beliefs ("subjective norms"). According to the model, the individual's personal attitude is a function of beliefs the person holds about the consequences of a given behavior, and the person's evaluation of these consequences. Control beliefs are those that the person holds about his or her ability to perform the behavior. The person's social beliefs, on the other hand, are a function of the degree to which the person perceives social pressure to perform the behavior. This perceived social pressure, or subjective norm, is determined by the person's perceptions of how referent individuals or groups think that he or she should behave in a situation, and the degree to which the person is motivated to comply with these referent individuals or groups. According to the theory of planned behavior, researchers attempting to predict whether a college student will engage in binge drinking should assess the student's personal attitudes toward such behavior, the degree to which he or she feels a sense of control over the behavior, and his or her perceptions of what relevant referent others (e.g., peers, parents) would endorse with regard to binge drinking.

Are social beliefs important? The salience of personal and normative beliefs. The theory of planned behavior argues that the combined additive influence of attitudes, control beliefs, and social beliefs (subjective norms) leads to behavioral intentions, which in turn directly influence behavior. Although the theory acknowledges that the relative importance of one type of belief over the other will vary with the situation, it does not provide an analysis

of the conditions under which each type of belief will be most important in predicting a behavioral intention, beyond stating that it is an empirical question (Fishbein & Ajzen, 1975).

In fact, Ajzen (1991) called into question whether social norms independently predict behavioral intentions at all. In a review of the literature, he noted that in the vast majority of the studies on the theory of planned behavior, both the attitudinal and the perceived control components of the theory were significant independent predictors of behavioral intention. In contrast, results for the subjective norm component of the theory were mixed. Some studies showed that subjective norms made a significant contribution to the prediction of intentions, yet other studies showed that subjective norms did not independently predict behavioral intentions. From this review, Ajzen (1991) concluded that, "personal considerations tended to overshadow the influence of perceived social pressure" (p. 189). Recent research conducted from a social identity/self-categorization perspective has suggested that this may be a premature conclusion (e.g., Terry & Hogg, 1996; White, Terry, & Hogg, 1994). In the next section we will review recent work that has helped specify the conditions under which people's behavioral intentions are influenced by the presence of social factors, most particularly social groups.

When do social factors influence behavioral intentions? Recent research has begun to specify how people weigh personal and social factors when formulating behavioral intentions. These factors include social identification (Terry & Hogg, 1996; White, Terry, & Hogg, 1994), cultural factors (Abrams, Ando, & Hinkle, 1998), the accessibility of social norms (Fishbein, Chan, O'Reilly, Schnell, Wood, Beeker, & Cohn, 1992), and the accessibility of the collective or private self (Ybarra & Trafimow, 1998).

Social identification. Researchers working from a social identity/self-categorization theory perspective (e.g., Terry & Hogg, 1996; White, Terry & Hogg, 1994), have raised the possibility that the lack of consistent support for the social norms component of the theory of planned behavior is due to the theory's conceptualization of social norms. Specifically, Terry and Hogg (1996) argue that the social component of the theory of planned behavior should be reconceptualized in light of recent theoretical and empirical development on social identity and self-categorization theory.

Social identity theorists define social identity as "that part of an individual's self-concept that derives from his knowledge of his membership in a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1982, p. 255). According to social identity theorists, people are motivated to preserve a positive sense of themselves. One of the ways that people can achieve such a positive self-identity is from their memberships in social groups. Therefore, social norms should be most likely to predict behavior when group membership is a significant and valued part of an individual's self-concept.

In a set of studies, Terry and Hogg (1996) showed that social norms did make significant independent contributions to behavioral intentions, but only when the referent others were members of a group that was a part of the participants' social identity. Specifically, Terry and Hogg (1996, study 1) looked at the influence of attitudes, perceived level of behavioral control, and social norms on students' intentions to engage in exercise behavior. Consistent with the theory of planned behavior, analyses showed that both atti-

tude and perceived level of behavioral control were significant predictors of behavioral intentions for all the students. Consistent with predictions derived from social identity and self-categorization theory, however, the group norm component significantly predicted students' behavioral intentions to engage in exercise, but only for those who strongly identified with the relevant group (peers at the university). In contrast, the group norm was not a significant predictor of intentions for those who expressed low levels of identification with the reference group.

In addition to showing that the behavioral intentions of the low identifiers were not influenced by the group norm, Terry and Hogg (1996) showed that personal factors exerted a larger influence on the behavioral intentions of low identifiers as compared to high identifiers. For example, Terry and Hogg (study 2) showed that students who did not identify strongly with their group were more influenced by their personal attitudes toward the behavior than were students who did identify strongly with the group.

Overall, the results from the Terry and Hogg (1996) studies suggest that the normative component of the theory of planned behavior may exert a greater impact than the personal component when a behavior is seen as normative for a group that is part of participants' self-concepts. These results are consistent with social identity and self-categorization theory, which posit that when a person categorizes him or herself in terms of a social category, he or she assimilates to the group prototype, and thus behaves as a member of that group (Turner, 1991; also see Hogg, this volume, chapter 3). Personal factors, on the other hand, play a larger role in determining behavioral intentions for those who do not identify strongly with a salient reference group.

Cultural factors. Other research has shown that cross-cultural differences may influence the relative importance of the personal and normative components of the theory of planned behavior in predicting behavioral intentions (Abrams et al., 1998). For instance, Abrams et al. (1998) measured the effects of personal and normative factors in employee turnover intentions in both British and Japanese samples. Results from two studies showed that the predictive influence of subjective norms on turnover intentions was significantly stronger for Japanese workers than it was for British workers. People in collectivist countries are generally more sensitive to their social ties and to the expectations of their referent others (Markus & Kitayama, 1991). Cultural differences in the emphasis placed on meeting group expectations appears to moderate the relative importance of personal versus social factors in people's formations of behavioral intentions.

Accessibility of social norms. Other research has indicated that the degree of social community organization can have an impact on the relative importance of social norms in predicting behavioral intentions. Fishbein et al. (1992), for example, showed that social norms were stronger predictors of safe sex intentions for gay men who lived in well-organized gay communities than they were for gay men who lived in less organized communities. Further research showed that the differential impact of social norms on intentions was due to the degree of attention that the men paid to the normative pressures, rather than due to the existence of different subjective norms in the different communities (Fishbein, Chan, O'Reilly, Schnell, Wood, Beeker, & Cohn 1993).

Accessibility of private or collective self. Variations in the accessibility of the private or collective self can also influence the weight people give to the personal and social com-

ponents of intentions. Ybarra and Trafimow (1998), for instance, showed that when participants' private selves were made accessible in an experimental situation, they placed more weight on personal or attitudinal beliefs when forming behavioral intentions. In contrast, when their collective selves were accessible in the experimental situation, participants gave more weight to normative considerations when forming behavioral intentions. Research has also suggested a role for chronic accessibility or individual differences in the importance of personal and normative beliefs in behavioral intentions (Finlay, Trafimow, & Jones, 1997; Trafimow & Finlay, 1996).

The theory of planned behavior has been important in its emphasis on the significance of the social environment in determining whether or not people will behave consistently with their attitudes. Recent research on social identity variables has pointed to the possible utility of revising the social norms component of the theory of planned behavior to take into account research on the effects of social identification. Although the MODE model has not been as widely studied, it also acknowledges the means by which social norms can influence behavior. Examining both the deliberative and automatic processes should result in a better understanding of the conditions under which attitudes will predict behavior.

Attitude Change

Groups not only influence how people form and choose to act upon their attitudes, they also influence how and when people change their attitudes. In this section we will examine how groups influence attitude change in two different areas of research: One that has traditionally been studied from a group perspective, and one that has traditionally been studied from an intrapersonal perspective. We will begin by examining group polarization, one of the most actively researched topics in the study of group influences on attitude change. We will then take a close look at ways in which groups influence cognitive dissonance arousal and reduction.

Group polarization

One of the most robust findings in social psychology is that of attitude polarization following discussion with like-minded others. Specifically, research has shown that when group members with similar initial attitudes engage in group discussion to achieve consensus, the discussion strengthens the average individual inclinations of group members and leads to attitude polarization. The first attitude polarization studies examined attitudes toward risk. In these studies, groups comprised individual members who each personally supported a moderately risky approach to a choice dilemma and discussed the approach as a group in order to give a unanimous recommendation. Results showed that both the group consensus and the individual group members' postdiscussion private attitudes advocated greater risk than their average prediscussion recommendation (e.g., "risky shift" Stoner, 1968). The tendency to advocate more risk following group discussion was

deemed “group polarization” when subsequent research showed that the polarizing effects of group discussion generalized to attitude issues other than those that involved risk (Moscovici & Zavalloni, 1969).

The most widely accepted theoretical explanations of group polarization findings have focused on the role of the group as a source of either informational or normative influence (see reviews by Isenberg, 1986; Lamm & Myers, 1978; Myers & Lamm, 1976). The most widely researched informational explanation, the persuasive arguments position (e.g., Burnstein & Vinokur, 1977), maintains that before expressing an attitude or choice, people perform a mental search for arguments either in favor of or against the attitudinal position or choice. According to this line of reasoning, when group members formulate their pretest attitudes, each member initially relies on a somewhat different set of arguments for or against the topic. Consequently, when the group members come together to discuss the topic, in the course of discussion they are exposed to supportive arguments that they had not thought of previously. Persuasive arguments theory maintains that the attitude polarization finding is a consequence of group members’ exposure to this additional supportive information.

Support for the role of persuasive arguments in attitude polarization has shown that group members’ postdiscussion ratings are influenced by the order in which they hear persuasive arguments (Kaplan & Miller, 1976). The fact that recency effects influence postdiscussion attitudes is consistent with the role of the group as a source of informational influence that is inherent in the persuasive arguments position.

In contrast to the persuasive arguments position, normative explanations of group polarization maintain that attitude polarization following group discussion is a result of social comparison processes (Jellison & Arkin, 1977; Sanders & Baron, 1975). Social comparison explanations hold that people are motivated both to see themselves in a socially favorable light and to present themselves in a socially favorable manner. Social comparison explanations of attitude polarization that focus on “bandwagon effects” maintain that people have a desire to be different from others in a valued direction (see Isenberg, 1986; Turner, 1991 for discussions of variants on this social comparison explanation). According to this explanation, participants in group polarization studies shift their attitudes to more extreme positions in order to hold a more favorable position than the rest of the group. Evidence in support of the social comparison explanation of polarization effects has shown that under certain circumstances participants’ attitudes become polarized even when they are only given knowledge of the group norm and are not exposed to persuasive arguments per se (Blascovich, Ginsburg, & Veach, 1975; Myers, Wojcicki, & Aardema, 1977).

Although research has supported the role of both persuasive arguments and social comparison in accounting for attitude shifts in group polarization studies, reviewers have noted that neither perspective is able to account for all the results (see, e.g., Isenberg, 1986; Myers & Lamm, 1976). Additionally, recent research on the influence of other group variables in attitude polarization has shown that the persuasive arguments viewpoint and the social comparison explanations are not sufficient accounts of group polarization findings. Specifically, several studies examining predictions derived from social identity and self-categorization theory suggest that social categorization processes also play a significant role in group polarization.

Social identification theory/self-categorization theory. Self-categorization theory also offers a theoretical explanation of group polarization. Group polarization effects occur through three steps: (1) categorization of the self as a member of a group; (2) identification of the prototypical characteristics, behaviors, and norms of the group that differentiate the ingroup from other groups; and (3) stereotyping of the self as a member of the group (Mackie, 1986; Mackie & Cooper, 1984; Turner, 1982, 1985, 1991). According to this theoretical explanation of group polarization, attitude polarization in response to information about one's ingroup or discussion with one's ingroup occurs as a result of people conforming to a polarized group norm (Hogg, Turner, & Davidson, 1990).

Categorization of the self. Research has been consistent with this social categorization explanation of group polarization. For instance, research has shown that participants exhibit attitude polarization in response to persuasive arguments only when the arguments are put forth by members of an ingroup. Mackie and Cooper (1984, study 1), had participants who were mildly in favor of retaining standardized tests as college admissions criteria listen to a taped discussion of three people presenting arguments either in favor of or against retaining such a policy. Participants were led to believe that they would participate in a similar group discussion later in the session, and that their group would compete with another group for a monetary prize. Half of the participants were led to believe that the discussants on the tape were members of their future ingroup (ingroup condition), whereas half of the participants were led to believe that the discussants were members of the group against which their group would be competing (outgroup condition).

Results showed that participants who were led to believe that the discussants were ingroup members exhibited more attitude polarization than those who had heard the identical discussion attributed to an outgroup. Although the persuasive arguments the participants heard were identical, only participants who categorized themselves as members of the group on the tape exhibited attitude polarization and changed their attitudes to become more in favor of retaining standardized tests.

Polarization of group norm. Mackie (1986; see also Mackie & Cooper, 1984) also examined the processes – polarization of the group norm and self-stereotyping – through which social categorization is postulated to drive the polarization effect. Consistent with the idea that when people categorize themselves as group members they perceptually distinguish their ingroup from other groups, Mackie (1986) found that participants tended to attribute more extreme attitudes to their own groups than did outside observers who heard the same discussion. Mackie (1986) speculated that this perceptual accentuation or polarization of the group norm may have led participants to perceive that their group was more unanimous in its position on the standardized test issue than would have been attributed by outside observers.

Conformity to polarized norms. Results from Mackie (1986) also suggest that the attitude polarization exhibited in group polarization is a consequence of participants conforming to polarized or extremized group norms. For instance, in a set of two studies Mackie (1986) provided mediational analyses showing a significant correlation between participants' attitude change from pretest to posttest and the difference between participants' pretest and group norm estimates only for participants in the ingroup condition. These analyses suggest that for participants for whom the group was a

salient ingroup, perceptions of the group's norm influenced their attitude change toward the issue.

Comparative context. Other research has shown that the context in which the group is embedded influences the degree and direction of group polarization. Specifically, self-categorization theory maintains that group polarization is "conformity to a polarized norm which defines one's own group in contrast to other groups within a specific social context" (Hogg, Turner, & Davidson, 1990, p. 77). Hogg et al. (1990) reasoned that manipulating the social context by introducing other groups into the social environment would influence the degree and direction of the group defining norms. Results from this study showed that when groups were confronted with outgroups at one or another pole of a risky or cautious scale, the groups polarized away from the direction in which the outgroup was leaning. For instance, groups confronted with a risky outgroup polarized toward caution on choice dilemma decisions, whereas groups confronted with a cautious outgroup polarized toward risk.

The persuasive arguments, social comparison, and self-categorization explanations for group polarization all suggest different ways that groups can influence attitudes. Although group polarization researchers have always examined social influences on attitude change, other researchers have focused on cognitive influences. For example, cognitive dissonance researchers have only just begun to explore the many ways in which groups can influence dissonance-induced attitude change.

Cognitive dissonance

Although the first published study of dissonance, *When Prophecy Fails* (Festinger, Riecken, & Schachter, 1956), examined dissonance within a social group, very little subsequent work has looked at group influences on dissonance. In fact, of the thousands of dissonance articles that have been published over the last 40 years, only a handful have examined dissonance within a group context. However, by examining these few studies, we can find evidence that groups can influence both dissonance arousal and dissonance reduction strategies.

Dissonance arousal

Cognitive dissonance, as originally formulated by Festinger (1957), arises when an individual holds two inconsistent cognitions simultaneously. This situation creates psychological discomfort, which the individual is then motivated to reduce. After performing a behavior, people assess the consequences of that behavior, and whether or not they were responsible for any negative consequences (Cooper & Fazio, 1984). When people accept responsibility for causing aversive consequences, they experience dissonance arousal.

Groups can influence both whether people experience dissonance and how they reduce dissonance arousal once it occurs. In some situations, individuals may be able to avoid feelings of responsibility for negative outcomes (and thus avoid dissonance arousal) by diffusing responsibility throughout a group. At other times, people may compare their

behavior to normative or group standards to judge whether their actions have been inconsistent, or have created undesirable consequences. Sometimes group membership alone is enough to create dissonance, if a group member is confronted by the knowledge that his or her group or a member of the group has committed a dissonant act.

Diffusion of responsibility. As mentioned above, dissonance occurs when a person feels responsibility for creating an aversive outcome (Cooper & Fazio, 1984). Consequently, when people are able to escape feelings of responsibility for aversive outcomes, they should not show any evidence of dissonance arousal. When there are other people around who may serve as targets to blame, it is much more likely that people will diffuse responsibility for an outcome, and therefore not experience dissonance.

Zanna and Sande (1987) examined diffusion of responsibility by having students write counter-attitudinal essays by themselves, or as a combined group effort. In one condition, three students sat together in a room, writing their own essays. In the other condition, the students discussed their arguments, planned the essay, and wrote one final product. The researchers expected that students would feel less responsible for their actions when their essays had been created as a group effort.

The results of the experiment supported this hypothesis. When three students wrote separate essays in the same room, they showed the expected attitude change predicted by dissonance theory. After writing in favor of university funding cutbacks, they became more favorable toward the policy. In contrast, the students who wrote one essay together did not show as much attitude change as the students who had written their essays separately. Although writers of “group” essays believed their essays would be more persuasive, they apparently did not accept responsibility for the negative outcomes their persuasive essays might create. This responsibility could have been shared (and thus reduced), or even completely assigned to the other students who helped write the final essay.

According to Zanna and Sande’s (1987) theorizing, and in line with the predictions of the “New Look” model of dissonance (Cooper & Fazio, 1984), dissonance arousal probably never occurred for these participants. If they did not feel responsible for creating an aversive consequence, then they should not have had any dissonance arousal. However, it is interesting to consider whether “diffusion of responsibility” might also work as a dissonance reduction strategy, once dissonance has been aroused. In some cases, people might first accept responsibility for their actions, then later decide to blame their actions on others.

Normative versus personal standards for behavior. Groups can provide people with an “escape” from dissonance arousal, but they can also provide the information people use to determine whether they have behaved inconsistently. Stone, Cooper, and colleagues (Cooper, 1999; Stone, 1999; Stone, Cooper, Galinsky, & Kelly, 1999) have recently proposed that the salience of personal and normative expectations can help determine whether individuals will experience dissonance arousal. According to this self-standards model, when people assess their recent behavior, they compare that behavior to either normative or personal standards. If people decide that their behavior has failed to live up to the salient expectations, they will experience dissonance.

In most dissonance experiments, personal and normative expectations for behavior are the same; most individuals share societal behavioral norms. However, when an individual's personal expectations for behavior are salient, that individual may not experience dissonance, even if his or her behavior fails to conform to normative standards. For example, imagine a young man in Festinger and Carlsmith's (1959) boring task experiment. He has been induced to lie about the uninteresting nature of the experiment. If social norms are made salient, most individuals should feel dissonance, since lying goes against commonly accepted social norms. However, if the individual is an accomplished actor or con-artist, he might feel pleased at convincing the other student of something that was not true. In this case, if individual standards for behavior were brought to mind, the con-artist would not feel dissonance, since his personal standards for behavior do not preclude lying.

Several studies by Stone and his colleagues (Kelly, Stone, & Cooper, 1996; Stone et al., 1999) have shown that the salience of normative and personal standards influences dissonance arousal. In one experiment, Stone et al. (1999, experiment 2) manipulated the accessibility of self-standards. The experimenter asked participants to rate 10 psychology studies, and gave them a choice between two they had rated similarly. After the choice, participants were asked to write about a target person, either in terms of their own personal standards, or in terms of the normative standards held by "most people." When participants wrote from a personal perspective, those with high self-esteem experienced more dissonance than did those with low self-esteem. The manipulation apparently reminded high self-esteem participants of their own high standards for behavior, which they had recently failed to meet. There were no differences between the responses of high and low self-esteem participants in the normative condition, and their responses did not differ from a no-prime control group.

According to Stone et al. (1999), when normative standards are salient, everyone who shares those norms should experience dissonance, regardless of individual differences in personal standards for behavior. However, other research has shown that normative influences can differ, depending on the level of group identification (e.g., Terry & Hogg, 1996). If an individual is not closely identified with a group, that individual may not experience dissonance, even when failing to live up to salient group norms.

Normative standards across cultures. While individuals may vary in the extent to which they subscribe to cultural norms, norms themselves can vary from culture to culture. The vast majority of researchers who have studied dissonance have examined how people from Western cultures respond to different kinds of dissonant situations. Inherent in all of this research is the assumption that the participants will find their experimentally induced behavior unacceptable, and thus will be motivated to reduce dissonance. While lying to another participant (as in Festinger & Carlsmith's 1959 experiment) may go against the norms of many cultures, other commonly used dissonance paradigms may not induce the same level of dissonance in all cultures.

Heine and Lehman (1997) studied both Japanese and Canadian participants using the "free-choice" paradigm. The researchers asked the participants to rate a selection of popular CDs, and then offered participants a choice between two CDs they had rated similarly. The Canadian participants showed the usual dissonance effect: When later asked to rate the CDs, the Canadians rated the chosen CD higher, or rated the unchosen CD

lower than they had before. The Japanese participants, however, did not show this typical “spreading of alternatives.”

Heine and Lehman (1997) interpreted their results as suggesting that people from the Japanese culture are not as concerned about the inconsistency that arises when they “lose” the positive aspects of the unchosen alternative, and “accept” the negative aspects of the chosen alternative. This could suggest that the Japanese may not be as concerned with limited instances of personal inconsistency. However, Sakai (1999) offers another interpretation of their results. He points out that the researchers used CDs of Western rock and pop music in the experiment, all of which may have seemed very similar to the Japanese participants. Sakai points out that Festinger (1957) predicted that the more similar people find the alternatives, the less dissonance they will have after making the choice. If people cannot distinguish between two items, why should they worry about choosing one rather than the other?

Sakai (1981) has found that in the forced-compliance paradigm, Japanese participants can experience dissonance. After being induced to advocate that their school should put an end to coeducation, the Japanese participants rated the anti-coeducation policy more favorably. This and other research by Sakai and his colleagues (e.g., Sakai, 1997) suggests that in some circumstances, Japanese participants will behave like Western participants, and will be motivated to reduce their dissonance.

More research needs to be done on cultural differences in dissonance arousal before we reach any conclusive answers about how dissonance varies between cultural groups. However, given what we know about the ways in which norms differ across cultures, it seems very likely that we will find different patterns of dissonance arousal in different cultures. Non-Western cultures might indeed place less emphasis on minor instances of personal inconsistency. However, it seems just as likely that we will find circumstances in which people from non-Western cultures experience much more dissonance than would be expected from Westerners. For example, a young American woman may experience some dissonance if she decides not to follow her parents’ wishes that she take up the family business. However, a young Japanese woman in the same situation might feel much more dissonance, if her actions are seen as highly inconsistent with the norms of a more interdependent culture. Researchers may need to re-examine the typical dissonance paradigms to see what assumptions they make about the norms and values of a culture. We may need different tools to examine different cultures.

Sharing of responsibility. In some situations, group membership alone may be a cause of dissonance arousal. If your group, or a member of your group, acts in a way that is inconsistent with your beliefs, you may experience dissonance. Many times people find themselves at odds with the leaders of the religious or political groups to which they belong. When such a group brings about an unwanted consequence, it can have implications for the members of that group.

If a person feels that he or she shares some of the responsibility for what the group has done, that person should experience dissonance. Sakai (1997) explored this idea by creating a two-participant version of Festinger and Carlsmith’s (1959) experiment. Using reasoning derived from Heider’s (1958) balance theory, Sakai created a “unit relationship” by having some participants share proximity and a common fate with a confederate in

the experiment. In this “grouped” condition, the researcher asked that one of the participants tell the waiting participant that the boring task was interesting. The confederate then offered to speak, but suggested that they both go tell the participant, and asked if this plan was acceptable. In the “ungrouped” condition the researcher asked the confederate to speak to the waiting participant. Sakai found that participants who shared a unit relationship with the confederate felt closer to their partners, felt more responsible for the negative consequences, and rated the boring task as more interesting.

Group membership can also lead to dissonance vicariously. Imagine that a member of your group acts in a way that normally arouses dissonance. For example, suppose that a member of a gun control group wrote an essay attacking legislation requiring locks on hand guns. Would you, as a person who belonged to the same gun control group, experience dissonance? Would you be motivated to change your attitude, even though you were not the person who wrote the essay?

Norton, Monin, and Cooper (1999) predicted that observing a group member engage in dissonance-producing behavior would cause dissonance to occur in the observer. In their first study, Norton et al. had students listen to a speech made by another person who was either a member of the student’s own residential college (ingroup) or a different college (outgroup). The speech, which advocated an increase in college tuition, was contrary to the true attitude of the participant and for most members of the college community. The results showed that, for participants who were highly identified with their ingroup, observing a fellow group member make a counter-attitudinal speech produced attitude change. This occurred despite the fact that the student participant made no speech him or herself and never interacted with the ingroup or outgroup member. None the less, the act that normally produces dissonance in the essay writer also produced attitude change in the participant – provided that the essay writer was a member of the observer’s ingroup and the observer was highly identified with that group.

In a second study, Norton et al. (1999) again had group members believe that a fellow ingroup member had agreed to make a speech that was contrary to the attitudes of most group members. However, in this study, the speech-maker made clear that he either was or was not personally in favor of the speech he had volunteered to make. Ingroup members who observed their fellow group member agree to write the speech then had their own attitudes assessed. As predicted, observers who strongly identified with their group changed their own attitudes in the direction of the speech in the very same condition that should have aroused dissonance in the speech writer – that is, when the speech-writer was personally opposed to the speech he wrote. Taken together, the results of the two studies suggest that group membership can cause us to experience dissonance vicariously. If a member of one of our highly valued ingroups acts in a dissonance-producing manner, then we too seem to feel the effects of dissonance arousal and change our attitudes accordingly.

Dissonance reduction strategies

Once dissonance has been aroused, it can be reduced in a number of different ways. In most dissonance studies, participants reduce their dissonance arousal by changing their

attitudes. However, sometimes attitude change is not the easiest or most preferable option. If people are unable to change their attitudes, they can also manage dissonance arousal through forgetting (Cooper & Gonzalez, 1976), bolstering (Sherman & Gorkin, 1980), derogating others (Cooper & Mackie, 1983), trivializing actions (Simon, Greenberg, & Brehm, 1995), affirming the self (Steele, 1988), or misattributing the source of dissonance arousal (Fazio, Zanna, & Cooper, 1977).

Group identities can influence dissonance reduction in at least three different yet systematic ways. If people's attitudes are tied to a group identity, the only way in which they may change those attitudes is by reducing their affiliation with the group. When reducing group affiliation is not a practical option, people must use dissonance reduction strategies other than attitude change. Finally, group identities can serve to protect people from dissonance, and prevent them from needing to change their attitudes.

Changing group-related attitudes. Sometimes group-related attitudes are definitional in nature: They define the characteristics of group members (Cooper & Mackie, 1983). When people change attitudes that are definitional to their group identities, they distance themselves from the group. By reducing group affiliation, they also reduce the inconsistency they created by acting against group norms.

Several researchers have theorized about how this distancing may operate. Steele (1997) has proposed that when people's self-integrity is threatened by their actions in a particular self-concept domain, they may disidentify with that domain. By distancing themselves from the threatening domain, people are better able to maintain global self-esteem. For example, when people commit a dissonant act that is related to a group identity, they can disidentify with the group, which will result in less need for attitude change and will protect self-esteem.

Aronson, Blanton, and Cooper (1995) studied disidentification in cognitive dissonance by inducing participants to write essays against expanding services for the handicapped. Writing the essays under conditions of high choice threatened participants' views of themselves as compassionate individuals. When these participants were given the opportunity to change their attitudes, they did so. However, when the opportunity to change attitudes was not readily available, participants instead reduced the importance of compassion to their self-definitions. Although Aronson et al.'s (1995) study focused on self-identities rather than social identities, it seems likely that disidentification with social identities could occur in a similar fashion.

Indirect dissonance reduction strategies. When dissonance arousal is closely tied to group membership, one of two things can happen. If the group is not important to you, you can distance yourself from the group, and therefore distance yourself from the source of the arousal. Sometimes, however, the group is so important to your identity that distancing yourself from the group would threaten your self-esteem. When this occurs, dissonance needs to be reduced through some other means.

Bolstering of ingroup. The members of Marion Keech's cult, as described in *When Prophecy Fails* (Festinger, Riecken, & Schachter, 1956), provide an extreme example of such a situation. The members of the cult had given up their jobs, homes, friends, and family to join the cult; all other groups and roles were pushed aside. When Ms. Keech's

prophecy failed to be fulfilled, the group members undoubtedly experienced extreme dissonance. However, distancing themselves from the group was not an option. Too many of their resources were at stake. Instead, group members responded to their dissonance by accepting Ms. Keech's declaration that their group had saved the world. In the language of cognitive dissonance theory, which Festinger later described (Festinger, 1957), the cult members appeared to be "adding consonant cognitions" to the dissonance equation. By spreading the good news about how the world had been spared, the cult members justified all of the actions that had led them to join the cult in the first place.

This "bolstering" response to a threat to group identity can be seen more systematically in an experimental study conducted by Sherman and Gorkin (1980). Sherman and Gorkin invited young women who considered themselves to be feminists into the laboratory, where they were asked to solve a brain-teaser. The correct answer to the problem required the participants to realize that the doctor in the question was female. Most of the women failed to solve the problem, because they assumed (in a very nonfeminist fashion) that the doctor was male. The women who failed to solve the problem experienced dissonance, yet they were unable to simply change their attitudes about feminism. Because their identities as feminists were important, the women needed to reduce dissonance in another manner. In this case, the women chose to "bolster" their feminist beliefs, and they responded in a more feminist fashion when later rating job applicants.

Derogation of outgroup. Bolstering is not the only way people can deal with dissonance when changing groups is not an option. Cooper and Mackie (1983) examined this same issue, from the perspective of social identity theory. If membership in a group is defined by holding a particular set of attitudes, group members will be less likely to change those "definitional" attitudes.

Cooper and Mackie (1983) decided to examine Reagan re-election supporters belonging to the "Youth for Reagan" group, since these students would presumably be unlikely to change their pro-Reagan attitudes. Under conditions of high or low choice, they asked group members to write one of two counter-attitudinal essays. Those who wrote essays in support of government-funded healthcare showed the pattern typical of dissonance studies: Students who wrote under conditions of high choice changed their attitudes while those writing under conditions of low choice did not. The other half of the participants wrote essays in support of the re-election of President Carter, an issue that clashed directly with their identities as Youth for Reagan. These participants did not show any attitude change, even in the high-choice condition.

According to dissonance theory, the students who wrote for Carter under conditions of high choice should have been experiencing dissonance. However, because they could not easily change an attitude so closely related to the very definition of their group membership, they needed to reduce their dissonance another way. Although there was no attitude change toward Carter per se, when participants were later asked to rate Carter supporters, those who had written high-choice essays in favor of Carter gave Carter supporters more negative ratings, as compared to students who had written low-choice or healthcare essays. This study shows that another way people can reduce dissonance without altering a definitional group attitude is by derogating an outgroup. Derogation and bolstering may be two sides of the same coin: Bolstering enhances ingroup identity, while derogation diminishes the outgroup.

Forgetting. A study of group identity by Cooper and Gonzalez (1976) shows that forgetting is yet another strategy that people can use to combat group-based dissonance. Members of an evangelical Christian group and non-evangelical Christians were invited into the laboratory and asked to read, memorize, and tape-record pro-Buddhist messages under conditions of high or low choice. After recording the pro-Buddhist message, non-evangelical Christians became more favorable toward Buddhism if they had recorded the message under conditions of high choice. Evangelical Christians did not change their attitudes toward Buddhism, regardless of the level of choice.

Although they did not show attitude change, the evangelical Christians in the high-choice condition remembered less of the pro-Buddhist paragraph than did other participants. It appears that the high-choice evangelical Christians may have deliberately tried to put the essay out of mind. Although some of the poor memory may have been due to an impoverished “Buddhism” schema, evangelical Christians did remember significantly more in the low-choice, as opposed to the high-choice condition.

Bolstering, derogating outgroups, and forgetting can all help people deal with group-created dissonance when leaving the group is not a viable option. Research will undoubtedly uncover other possible ways that people can deal with group-created dissonance. Although it has not yet been studied in a group-identity context, it seems that trivialization (Simon, Greenberg, & Brehm, 1995) may also provide a possible avenue for dissonance reduction when people are unable to disidentify with a group. For example, if individuals in Cooper and Gonzalez’s (1976) study were asked to think about the importance of writing their essays “in the grand scheme of things,” they might have decided that writing the essay was not important, which would have reduced their dissonance.

When group identities protect the self. Although groups can create dissonance for their members and can limit the possible methods of dissonance reduction, groups can also help reduce dissonance once it has been aroused. Steele’s (1988) self-affirmation theory states that when people are able to affirm an important aspect of their self-identity, they should not need to change their attitudes following a dissonance manipulation. Because positive identity is in part derived from membership in social groups (Tajfel, 1982), group membership should be able to serve as an affirmation.

In a study by Steele, Hopp, and Gonzales (1986, cited in Steele, 1988), students with a business or science value orientation participated in a dissonance experiment. After dissonance had been aroused, but before attitudes were measured, the students were given an opportunity to put on white lab coats. When their attitudes were later assessed, business students showed the typical dissonance pattern – they changed their attitudes under conditions of high, but not low choice. The science students, however, had been given an opportunity to affirm an important social identity when they were asked to wear the lab coats. Because they had the opportunity to self-affirm, these students did not show the attitude change typical of dissonance experiments.

In addition to influencing existing dissonance arousal, group identities might also help prevent dissonance from being aroused. Important group identities may serve a protective function, insulating people from the negative impact of dissonant acts. If people focus on a social group to which they belong (one that has not been implicated in the dissonance-inducing attitude issue), they may be able to avoid dissonance arousal altogether.

Although most self-affirmation experiments have focused on affirmation after dissonance has been aroused, Steele and his colleagues (Steele, Spencer, & Lynch, 1993) have also described this self-protective function of affirmation. According to their theory, when self-resources are primed before the dissonant act is committed, people can be insulated from potential dissonance arousal. For example, when Steele et al. (1993) primed self-resources for high self-esteem participants by having them fill out a self-esteem scale, the high self-esteem participants did not change their attitudes during a later dissonance experiment. Group identities may serve the same protective function; when important group identities are salient, people may be less likely to experience dissonance.

Linville's (1985, 1987) theory of self-complexity also addresses the self-protective function of group identities. According to self-complexity theory, the more identities a person holds, the more resilient that person will be when faced with threats to the self. Social identities, along with personal identities may help protect people who are experiencing dissonance. As Linville points out, self-complexity theory brings to mind the saying "don't put all of your eggs in one basket." If your identity is only made up of one aspect (e.g., cult member) and that identity is threatened, you will experience emotional distress. However, if your identity is made up of many aspects (e.g., teacher, soccer player, Democrat, social club member), then when one of those aspects is threatened, you will still have many other aspects available to maintain your self-esteem.

On the basis of self-complexity theory (Linville, 1985, 1987), one could imagine that people with many social identities might be less likely to experience dissonance. First, people high in self-complexity have been found to be less emotionally reactive, and therefore they might not experience as much dissonance arousal. In addition, because they have so many potentially affirming identities that could be primed, the odds are greater that some cue in the environment will provide an affirmation opportunity. For example, if Democrats were induced to write anti-Democrat essays, those with many alternative social identities (father, teacher, tennis player, etc.) would have many other identities to turn to, if they had to distance themselves from their identities as Democrats.

As we have shown, groups can influence both dissonance arousal and reduction. Groups can influence dissonance arousal by providing the normative standards to which people will compare their behavior. Groups can also provide an easy target for blame, when people attempt to diffuse responsibility for outcomes. In addition, people may experience dissonance when they share a group identity with someone who creates an aversive outcome. Groups can influence the route to dissonance reduction by providing an opportunity for disidentification, or by blocking attitude change as a reduction strategy. Finally, groups can serve to protect us from dissonance, and can reduce the need for attitude change once dissonance has been aroused.

Today's attitude researchers are helping to bring back the "social" in the social psychological study of attitudes. Now that we understand so much about the intrapersonal aspects of attitudes and attitude change, it is time to pay attention to the interpersonal aspects. In many cases, salient norms or group identities may provide important information that will help us understand what attitudes people will form, when they will act upon those attitudes, and the conditions under which they will change their attitudes.

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CHAPTER TWELVE

System Constraints on Leadership Perceptions, Behavior, and Influence: An Example of Connectionist Level Processes

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Traditionally, leadership has been defined in terms of the traits or actions taken by a leader (Yukl, 1992) or the perceptions of followers (Hollander & Julian, 1969; Lord & Maher, 1991). We define leadership as a “*social perception, grounded in social-cognitive psychological theory that produces an influence increment for the perceived leader*” (Lord & Smith, 1998). While there are many other definitions of leadership which focus on factors like individual traits, leader behaviors, interaction patterns, or role relations (Yukl, 1992), this definition emphasizes both the social-cognitive nature of leadership and the widely recognized link between leadership and personal influence (Hollander & Offerman, 1990; Katz & Kahn, 1966). It fits well with the systems-oriented view of leadership which we advocate in this chapter.

Most leadership theories focus on the individual as a source of leadership, and by doing so, neglect the effects of larger social systems in which the individual is embedded. For example, proponents of transformational leadership have argued that it is a quality of specific individuals that is universally desired and effective, transcending national and organizational boundaries (Bass, 1997). However, recent work by Pawar and Eastman (1997; also see Klein & House, 1996) maintains that important contextual factors constrain organizational receptivity to transformational leadership activities. Similarly, Shamir, House, and Arthur (1993) stress that the motivational aspects of transformational leadership result from the fit of leader qualities and behaviors with subordinates’ self-schema. By emphasizing the receptivity of organizations or individuals to transformational behav-

iors, these authors imply that the effectiveness of transformational leadership depends on the confluence of multiple factors, not just the qualities of the leader.

Work focusing on leadership perceptions has reached the same conclusion. Hall and Lord (1995) note that understanding both affective and cognitive reactions to leadership often requires levels of analysis that go beyond individual leaders. For example, when there is substantial variability across perceivers in the constructs used to assess leadership (e.g., leadership prototypes), then dyadic level analysis involving the fit between leaders and followers is required. The complexity of such interactions is illustrated by work on social identity theory (Hains, Hogg, & Duck, 1997; Hogg, Hains, & Mason, 1998; also see Hogg, this volume, chapter 3). This research shows that both group prototypes and more general leadership stereotypes are used to evaluate leaders, but the effects of these two components can be moderated by the perceiver's identification with the potential group.

Together, these works imply that leadership cannot be simply understood in terms of a leader's actions or in terms of abstract cognitive prototypes of followers. Rather, leadership results from a number of interacting factors that go beyond individual qualities (Zaccaro, Gilbert, Thor, & Mumford, 1991). Many factors (e.g., context, task, personal qualities of leaders and group members, group history) jointly affect cognitive and affective processes, which in turn affect social perceptions such as leadership. Consistent with this perspective, we take a broader systems-oriented view in explaining leadership perceptions, behavior, and social influence. Importantly, along with Lord and Smith (1998), we do not see the causal origin of leadership as being in the leader, as with traditional work emphasizing leadership traits (Lord, De Vader, & Alliger, 1986; Mann, 1959; Stogdill, 1948), or in the follower, as with social construction approaches (Meindl, 1995). Instead, we maintain that causality accrues from the confluence of contextual and social processes that produce the cognitive and affective responses of group members (also see Chemers, this volume, chapter 16).

In many respects, our viewpoint suggests that a paradigm shift is required in the way that researchers think, write, and research leadership. This transition in thinking also requires a change in the rules for understanding how factors influence leadership. Because our perspective highlights that leadership is part of a system, it implies that a number of factors act to create leadership simultaneously, instantaneously, and dynamically. We suggest that for both perceivers and actors, these factors can best be integrated using parallel constraint satisfaction models or connectionist-level cognitive architectures (e.g., Rumelhart, Smolensky, McClelland, & Hinton, 1986; Read, Vanman, & Miller, 1997; E. R. Smith, 1996; E. R. Smith & DeCoster, 1998). In the following section, we provide a more explicit presentation of this perspective.

Connectionist Model of Schema Activation

Figure 12.1 provides a generic model of a connectionist network. Although not intended to represent a formal model, this figure conveys the basic elements of our position regarding leadership. At the center of the figure is a specific leadership schema or prototype,

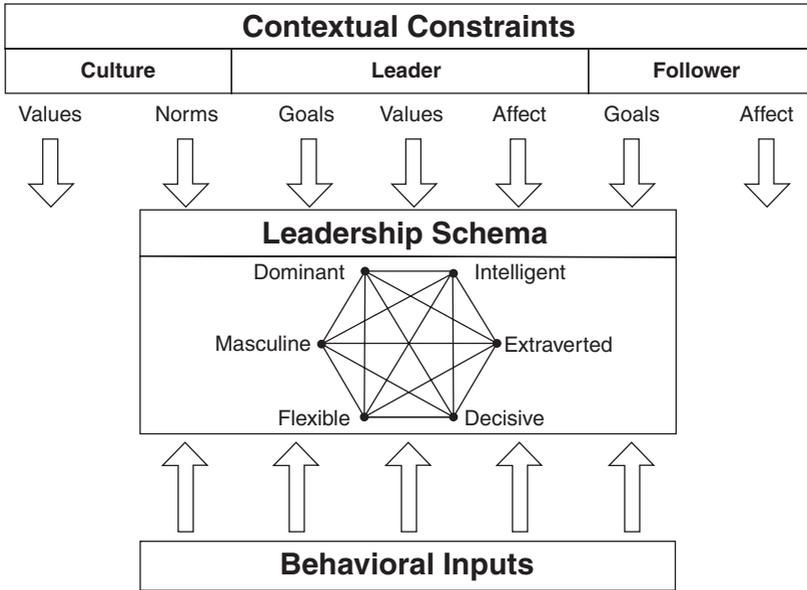


Figure 12.1. Schematic of contextual constraints on recurrent connectionist network showing reciprocal connections among leadership schema elements.

which in this example is composed of a large number of interconnected traits (i.e., intelligent, flexible, and decisive). These traits form a recurrent or mutually activating connectionist network (E. R. Smith, 1996). These trait terms receive input from the behaviors of potential leaders, as shown on the bottom of Figure 12.1, as well as from higher order constraints. Figure 12.1 shows three potential aspects of the context that can serve as constraints on this network, and thereby affect the pattern that is activated. Contextual factors such as culture, followers, or a potential leader can act either to increase or decrease the activation of each of the elements in the center of the figure. Each of these contextual factors can be thought of as having multiple features that can serve as inputs to the central network in the figure. However, to simplify this figure, we have not drawn explicit paths linking each perceived contextual constraints to each aspect of the recurrent network. Though not shown, these paths and corresponding weights, which specify the amount of activation or inhibition that flows along paths, are critical elements of connectionist networks.

Such networks explain how constructs are activated or remembered. Essentially, an input pattern causes the activation of interconnected units, which in turn activate each other. After many cycles, stable levels of activation are created which optimize the fit of the activation pattern to the various constraints represented by the between-unit connections, initial behavioral inputs, and the top-down constraints. This state is called an *attractor* of the network and it represents the creation of a mental unit like a category or prototype through what is often called a “settling-in” process.

It is important to note, however, that such networks *recreate* rather than remember information. As E. R. Smith (1996) notes, “It seems likely that all types of cognitive representations will be found to be flexibly reconstructed in a context-sensitive way rather than retrieved from memory as they were stored . . .” (p. 901). Such a model allows perceiver prototypes or behavioral scripts to be fluid and contextually sensitive (Read et al., 1997), yet at the same time produce coherence and substantial consistency. Consistency comes from the pattern of interconnections among units, which is a property of an actor’s or perceiver’s cognitive schema, while situational sensitivity results from the different inputs to such units across situations. Thus, connectionist networks offer one solution to explaining how our perceptual and interpretive processes embed leadership in a task and social system. They also provide a processing model which is compatible with recent thinking in social and cognitive psychology. Importantly, since connectionist systems are subsymbolic (Rumelhart, 1989), they could be expected to operate under the high cognitive load that characterizes supervisor/subordinate interactions (Maher, 1995).

In short, we maintain that leadership is a product of a social system that is influenced by both task and organizational contexts as well as individual characteristics (e.g., motivation, personality, abilities) of the members of these systems. Leadership occurs through processes by which social and task systems “constrain” both the accepted definition of leadership (e.g., prototypes) and the behavioral templates (e.g., scripts) used by leaders.

Analytic Issues

This perspective raises several analytic issues, which we will address throughout this chapter. The first issue pertains to the nature of the processes that produce leadership. For example, what cognitive, affective, and social perception processes are involved? The second issue concerns the proportion of total variance in key variables (i.e., leadership perceptions, leader behavior, or social influence) that is explained by system components. Addressing this question helps us to know where we should look for critical leadership processes (e.g., traits of potential leaders or cognitive constructs of perceivers). The third analytic issue concerns the appropriate level of analysis. Should we conceptualize leadership processes as operating at the *individual level*, which implies that interindividual differences are of critical concern; at the *dyadic level*, which would be more appropriate if interactions between leaders and followers were paramount; or at the *collective level*, which would be the proper focus if the context created by a particular social unit (e.g., group, organization) was the predominant factor influencing leadership? As well as specifying the appropriate theoretical framework, level of analysis issues are critical for understanding empirical findings. For example, if we find a relationship between leadership style and turnover in a unit, is this empirical finding produced by collective, dyadic, or individual level processes?

We use these three analytic issues – underlying processes, allocation of variance to system components, and level of analysis – as a structure for this chapter. Specifically, we address these three issues with respect to critical variables that have been the focus of much leadership research: leadership perceptions, leadership behavior, and social

influence. This approach allows us to cover a wide variety of the leadership literature in a systematic manner.

Leadership and Perceptions

Underlying processes

Although extensive research examining the behaviors and traits of leaders has accumulated, the variance in leadership due to followers and the interaction between the two has been generally neglected (Hall & Lord, 1995; Hollander, 1992; Meindl, 1995). However, social-cognitive theorists have investigated two basic psychological processes that may underlie the leadership perceptions of followers. According to Lord (1985), leadership perceptions can be understood in terms of both *attributional* and *categorization* processes. More recently, interest has also focused on the role of interactional justice in leadership perceptions (e.g., Tyler, 1997). To a large degree interest in interactional justice highlights the importance of affective processes for leadership perceptions. Below we review the literature related to these topics.

Attributional foundations of leadership perceptions. Many researchers working from a social-cognitive tradition have examined the role of attributional processes in leadership perceptions (e.g., Calder, 1977; Green & Mitchell, 1979; Lord & Smith, 1983; Martinko & Gardner, 1987; Meindl, 1995). Calder (1977) noted that leadership is just another social perception, and thus can be analyzed using general approaches such as attribution theory. He also noted that because we have extensive experience with leaders, most perceivers have implicit theories that define leadership. Meindl, Ehrlich, and Dukerich (1985) extended this perspective, maintaining that leadership attributions reflect a *simplified understanding* of organizational phenomena which are too complex for perceivers to analyze using objective or empirically based processes. Hence, they rely on their implicit theories and romantic beliefs about leadership. In a series of six studies, Meindl et al. also showed that extreme performance was more likely to be explained in terms of leadership than average performance, and that crisis accentuates the need of perceivers to attribute causality to leaders. More recently, Meindl (1995) has emphasized the social construction and group contagion aspects of such processes, which imply that factors external to the target are primarily responsible for leadership perceptions. Consistent with this position, Emrich (1999) found that perceivers falsely recalled leadership behaviors to a greater extent in crisis rather than tranquil situations. In fact, her results seem to indicate that a crisis context unconsciously activated leadership schema that were used by perceivers in evaluating potential managerial job candidates.

Leadership researchers have also attempted to understand the role of causal attributions in assimilating other information. For example, a large number of studies have investigated the influence of performance cues on leadership perceptions (Lord, 1985), finding that positive performance cues (i.e., information indicating a positive group outcome) result in increased perceptions of leadership, while negative performance cues (i.e., information indicating a negative group outcome) result in decreased perceptions of leader-

ship. These “performance cue effects” are larger when perceivers attribute causality to leaders rather than external factors (Maurer & Lord, 1991; Phillips & Lord, 1981) and they are minimized if perceivers encode information using scripts rather than person schema (Murphy & Jones, 1993). While such attributional explanations tended to emphasize explicit processes, Phillips and Lord (1981) also found that more implicit processes such as relying on perceptual salience of actors moderated the use of performance information in forming leadership perceptions.

Both of these approaches are consistent with recent thinking on attributional processes that emphasizes automatic processes (e.g., Gilbert, 1989). Consistent with such work, considerable research has focused on categorization processes associated with leadership, which we discuss in the following section. However, we first note that recent work on attribution theory by social-cognitive theorists has focused on connectionist models (Overwalle, 1998; Read & Marcus-Newhall, 1993). Given the speed and implicit nature at which attributional processes are likely to occur in ongoing groups, subsymbolic connectionist architectures may provide a useful model for understanding both attributions and categorization processes associated with leadership.

Categorization processes and leadership perceptions. According to leadership categorization theory, leadership perceptions can be understood as involving a match between perceiver-held prototypes and the characteristics displayed by a target that are noticed by the perceiver. Further, categories provide encoding and retrieval structures which can be used to form expectations of leaders or retrieve behavioral information regarding past leader behaviors (e.g., Rush, Thomas, & Lord, 1977).

Since originally formulated by Lord, Foti, and Phillips (1982), a large number of laboratory (e.g., Cronshaw & Lord, 1987; Fraser & Lord, 1988; Lord, Foti, & DeVader, 1984; Nye & Forsyth, 1991) and field studies (e.g., Foti, Fraser, & Lord, 1982; Foti, Lord, & Dambrot, 1992) have supported the basic tenets of leadership categorization theory. Based on the work of Rosch (e.g., 1978), Lord and his colleagues (Lord et al., 1984; Lord & Maher, 1991) argued that leadership prototypes can be arranged hierarchically into three levels. At the highest level are the most abstract or superordinate categories (e.g., leader vs. nonleader). At the middle level, the basic level, contextual information is taken into account and different types of leaders are differentiated (e.g., military, religious, or sports leaders). At the lowest level, the subordinate level, various types of leaders within a context are differentiated (e.g., differentiating military leaders by rank or differentiating male and female leaders). Thus, as one moves down the hierarchy of leadership prototypes, greater degrees of contextual specificity are encountered.

Although there has been consistent support for categorization theory, there has been little research that has detailed the mechanism through which leadership categories develop or are learned. According to Lord and Maher (1991), through our day-to-day experiences in particular group and organizational settings we develop detailed knowledge structures, or prototypes, that pertain to leadership. Consistent with this notion, Matthews, Lord, and Walker (1990) in their investigation of the development of leadership prototypes found that young children tend to base leadership judgments on exemplars, while older children base their leadership judgments on prototypes. These findings mirror work in the social-cognitive literature. According to Klein and his colleagues (e.g.,

Klein, Loftus, Trafton, & Fuhrman, 1992; Sherman, 1996; Sherman & Klein, 1994) exemplars will form the basis of cognitive knowledge structures when individuals have not yet had enough experience with a group or construct to form abstractions. However, with increasing experience, abstractions are created and become the basis of knowledge. Recent work by E. R. Smith and DeCoster (1998) suggests that the same connectionist models of association learning can explain both exemplar and prototype-based representations. Repeated exposures to exemplars that share characteristics in common should result in an increase in the strength of the weights between the common elements and a decrease in the strength of weights between elements that do not co-occur. Eventually, the weights become strong enough that they become self-activating when presented with appropriate inputs. That is, they create a recurrent network like that shown in Figure 12.1.

Lord and his colleagues have investigated the possibility that the leadership categorization process is influenced not only by abstract prototypes but also by an observer's own leadership self-schema. In comparison to abstract prototypes, the self may be particularly important in making leadership judgments because it is not only a more highly accessible and elaborated knowledge structure (Markus & Wurf, 1987), but it has also been found to be easily accessed and used as an habitual referent (Dunning & Hayes, 1996). One important implication of this work is that leadership self-schema should be used in perceiving leadership in others. Consistent with this notion, research suggests that individuals who are schematic, as opposed to aschematic, tend to generalize from leader categories to judgments regarding several dimensions of transformational leadership behavior (Lewter & Lord, 1992), provide more stringent leadership judgments (W. G. Smith, Brown, Lord, & Engle, 1999), and tend to display a fundamentally different trajectory in making leadership judgments across time (Brown, Marchioro, Tan, & Lord, 1998). Overall, initial empirical investigations support the notion that leadership self-schemas play an important role in leadership categorization processes and are deserving of further empirical work.

As was the case with leader prototypes, research suggests that there is a progression from exemplar-based knowledge about the self to the development of abstract self-schema (Klein et al., 1992). This research suggests that with increasing experience within the domain of leadership, the leader prototype may become self-defining for individuals. Consistent with this notion, research by W. G. Smith et al. (1998) indicated that college students' leadership self-schema are positively related to previous leadership experiences in adolescence. Importantly, these findings imply that to the extent that various demographic groups have different experiences, they will also have different leadership self-schema. In fact, the research by W. G. Smith and her colleagues also indicates that there are important gender differences in leadership self-schema, a result that is consistent with the notion that males and females may lead in a fundamentally different manner (Eagly & Johnson, 1990). These results suggest that an interesting avenue for future research may be to explore developmental experiences that may create individual differences in leadership self-schema.

Thus far, our discussion has highlighted the stability of leadership prototypes. Stability in such structures is consistent with the Lord et al. (1982) argument that distinct prototypes exist, although they vary with context (e.g., military vs. business), hierarchical

level (CEO vs. first-line supervisors), as well as with national cultures (Gerstner & Day, 1994; House, Hanges, Ruiz-Quintanilla, Dorfman, Javidan, Dickson, Gupta, & GLOBE, 1999; O'Connell, Lord, & O'Connell, 1990). Such differences may also correspond to important differences in the leadership experience of perceivers, allowing for the development of different prototypes. However, if perceivers must also adjust prototypes based on target gender or tasks (Hall, Workman, & Marchioro, 1998; Karakowsky & Siegel, 1999) or other momentary demands, the notion of retrieving a stable prototype from memory to guide judgments becomes less appealing. Too many prototypes would have to be learned to explain the flexibility exhibited by perceivers in evaluating leadership. Further, generalization to new situations would be hard to explain.

An alternative view is to explain contextual sensitivity in terms of constraints on a connectionist network used to generate perceiver prototypes. That is, contextual sensitivity is derived from the flow of activation as various constraints are satisfied and the network settles into an interpretation of a category as shown in Figure 12.1. In terms of leadership categorization, we propose that different leadership prototypes may be the result of different leadership categories being *recreated*, subject to the constraints created by knowledge of demographic group characteristics, organizational cultures, situational context, and task constraints.

In sum, much of the research on leadership categorization and attribution processes associated with leadership is consistent with the notion that leadership perceptions involve the activation and recreation of leadership categories via constraint satisfaction networks. Our interpretation is retrospective in the sense that this literature was not designed to test connectionist models of leadership perceptions. Thus, it needs to be further supported by future research which directly applies connectionist principles to explaining leadership perceptions. Such work may provide an important avenue for future research on leadership perceptions.

Affect. While most of the literature on social factors that may constrain leadership perceptions emphasizes cognitive aspects, affect is also important to leadership processes. Consideration is widely recognized as an important behavioral dimension of leadership (Stogdill, 1963) and liking of supervisors leads to much more positive dyadic relations (Duarte, Goodson, & Klich, 1994; Engle & Lord, 1997; Liden, Wayne, & Stilwell, 1993; Wayne & Ferris, 1990). Consistent with this work, Glomb and Hulin (1998) using videotaped supervisor/subordinate interactions as stimuli, found that displays of anger result in lower ratings for both male and female supervisors.

The most systematic assessment of leadership and affective processes comes from the research on procedural justice. Tyler and his associates (1997; Tyler & Degoey, 1995; Tyler & Lind, 1992) maintain that procedural justice perceptions by subordinates are central to effective leadership/authority. Tyler and Lind (1992) asserted that procedural justice is important because it informs people about their position within a group. According to Tyler and Lind's (1992) relational model, three aspects of a leader's behavior are central to relational judgments: neutrality of authorities, trustworthiness of authorities, and the status conveyed to subordinates. In this sense, perceptions of a leader serve as a conduit through which group identity information is communicated to members and

incorporated into their social identities. Fair treatment indicates that an individual is a respected member of a group (i.e., ingroup member), while unfair treatment serves as notification of marginal group status (i.e., outgroup member). The end result of this process is that individuals who perceive that they have been treated in a procedurally fair manner comply with social order and embrace the norms and values of their groups. In terms of leadership, this process provides leaders with legitimacy. In a recent review article, Tyler (1997) explored the impact of relational concerns in six different samples. As would be expected by the relational model, as subordinates' perceptions of procedurally just treatment increased, leaders were evaluated higher, perceived as being more legitimate, and had subordinates who were more willing to accept decisions.

This research clearly indicates that the affective nature of leader–subordinate relations is important. Affect is particularly important because it may serve as a surrogate for many other effects (Robbins & DeNisi, 1994), occurs very fast (Murphy & Zajonc, 1993), and may be insensitive to variations in cognitive load (Srull & Wyer, 1989). These characteristics are quite compatible with affect acting as an early and ubiquitous constraint in a connectionist network or as a more central quality that defines leadership.

Partitioning of variance

Viewing the locus of leadership as involving the interaction of social system components naturally raises the issue of how much variance is associated with the various components. Several small group studies, many of which used rotational designs (Kenny & Hallmark, 1992), provide a partial answer to this question. We located six studies that attempted to partition the variance in leadership (Albright & Forziati, 1995; Hall, Marchioro, Makiney, & Lee, 1998; Kenny & Zaccaro, 1983; Lord, Phillips, & Rush, 1980; Malloy & Janowski, 1992; Zaccaro, Foti, & Kenny, 1991), although only four provided estimates of the amount of variance accounted for by the follower. Results from these studies are summarized in Table 12.1, which shows that on average, target effects explained 53% of the variance in leadership perceptions and perceiver effects averaged 12% of the variance in these ratings. These results suggest that perceivers' perceptions account for a small but significant amount of variance in leadership ratings. This research provides no estimates of perceiver by target interactions, which cannot be separated from error unless longitudinal designs are used.

The Malloy and Janowski (1992) study also assessed liking and metaperceptions of leadership. For liking, 25% of the variance was associated with perceivers and 27% with targets, which corresponds with Foti and Luch's (1992) argument that affective reactions to leaders may depend on individual characteristics such as negative affectivity. For metaperceptions of leadership, which they define as the extent to which subjects were aware of others' judgments of themselves, perceiver effects explained 47% of the variance, and target effects only 1%. These results indicate that individual differences in assessing how one was perceived *in general* were substantial, but there was little accuracy in how one was perceived by a specific individual. Such results illustrate the important role of social perceptiveness in leadership.

Table 12.1. Variance Composition Studies

<i>Study</i>	<i>Group</i>	<i>Target</i>	<i>Perceiver</i>	<i>Target by perceiver interaction and error</i>
Lord, Phillips, & Rush (1980)	10%	53%	17%	20%
Albright & Forziati (1995)		59%	12%	29%
Malloy & Janowski (1995)		60%	7%	33%
Hall, Marchioro, Makiney (1998)		53%	13%	34%
Zaccaro, Forti, Kenny (1991)		43%		
Zaccaro & Kenny (1981)		49%		
Mean value		53%	12%	29%

Level of analysis

In analyzing leadership perception, Hall and Lord (1995) emphasize that both affect and cognitive perceptions can occur at many levels of analysis. If leadership perceptions reflected only between leader differences in traits or behavior, then individual-level analyses would be appropriate. Such analyses are represented by studies showing that certain traits – intelligence, masculinity, dominance, and self-monitoring – are associated with leadership emergence (see reviews by Lord, De Vader & Alliger, 1986 and Keeney & Marchioro, 1998). However, the fact that perceivers contribute an important proportion of variance indicates that perceivers also need to be considered. If, as we have argued, leadership prototypes vary with perceiver experience, then leadership categorization is a dyadic-level process since both leaders' and perceivers' prototypes determine the degree of match of stimuli to leadership categories. Also, to the extent that leadership processes depend on affect, dyadic levels of analysis may be necessary since affective reactions to leaders vary substantially across perceivers (Malloy & Janowski, 1992). At the group level, identity issues (Hains et al., 1997; Hogg et al., 1998; Lord, Brown, & Freiberg, 1999) or group affective tone (George, 1990) may create group-level effects on leadership perceptions. Meindl's (1995) theorizing about social contagion processes in perceiver constructions of leadership or attraction–selection–attrition processes (Schneider, 1987) also imply group levels of analysis.

Such issues are discussed in detail by Hall and Lord (1995) from both an information processing and statistical perspective. The approach taken in this chapter suggests another general way to approach levels of analysis issues, namely, *the appropriate level of analysis should depend on the strength of constraints of system components on leadership prototypes (or behavioral schema)*. Where social constraints from followers are strong, dyadic levels of analysis are appropriate. Where group or organizational constraints predominate, more aggregate levels of analysis may be more appropriate. Such reasoning may provide a useful approach for sorting out levels of analysis questions which may be difficult to resolve empirically without guidance from a coherent perspective on the determinants of leadership.

Interestingly, our theoretical perspective suggests an alternative empirical means to address levels of analysis issues. Namely, the strength of a specific constraint could be empirically accessed by examining its effect on schema accessibility. For example, if national or organizational culture, group identities, gender or task demands make characteristics like cooperativeness more likely to be activated in leadership prototypes, then they should directly affect the accessibility of such traits as well as their use in forming leadership perceptions. Accessibility might be directly assessed by reaction time measures to trait naming or prototypical ratings (e.g., Lord et al., 1984, Study 2), or less directly by examining tacit inference processes (Dunning & Sherman, 1997; Winter & Uleman, 1984). Where constraints from one system component (e.g., subordinate gender) are strong, accessibility and spontaneous inferences should be affected by manipulations of that component, and that component should be considered in specifying an appropriate level of analysis.

In sum, we have explained that leadership perceptions can be understood in terms of attributional, categorization, and affective processes. Each of these factors can be viewed as being constrained, in varying degrees, by a variety of contextual factors. We suggested that these constraints can be represented by connectionist networks learned by perceivers through experience. Such a network was shown in Figure 12.1. Thus, perceptions and expectations of leaders can be tuned to particular contexts. As discussed in the next section, similar processes can also explain how leaders adjust their actual behavior to contextual requirements.

Leadership Behavior

Underlying processes

Leadership behavior, like other behaviors, is generally thought to result from information processes involved in perceiving situations, relating situational perceptions to accumulated knowledge and current goals, and then using plans and schema to guide the production of situationally appropriate instrumental behavior (Wofford & Goodwin, 1994). Thus, while behavior may be highly sensitive to context, consistencies in how we process information can be a source of stability (Mischel & Shoda, 1995, 1998). In other words, people may respond consistently when encountering similar situations at different times, although their responses vary a great deal when different situations are encountered. Mischel and Shoda explain such consistencies in terms of cognitive-affective units that allow development of encoding categories, expectancy formation, affective reactions, specification of goals and values, and self-regulation through scripts, plans, and strategies. They suggest that individuals vary in the chronic accessibility of particular mental representations and also in the organization (or interconnectedness) of these representations. They also suggest that such processing is implemented through connectionist networks, a point developed in detail by Read et al. (1997) in discussing goal-directed behavior in social interactions.

The implications of these models for understanding leadership behavior are quite interesting. They suggest that leaders would adjust behavior based on a variety of contextual

variables, but they also suggest consistencies in the way leaders would organize perceptions and translate perceptions into behavior. Thus, some leaders may manifest a consistent task orientation and others a consistent social-emotional orientation, while still adjusting behavior across tasks, situations, and subordinates. This perspective is compatible with much of the leadership literature that focuses on styles of leadership (Yukl, 1992), since styles of leadership may reflect the underlying organization of processing units. However, it also suggests that contextual factors may be more important in producing variation in leadership behavior than leadership researchers have typically recognized.

If one looks carefully at the leadership literature, there is considerable evidence indicating that a leader's behavior is dependent on a variety of factors such as subordinate performance (Farris & Lim, 1969; Lowin & Craig, 1968), performance expectations for subordinates (Eden, 1992), task characteristics (Lord, 1976), the sex-role orientation of tasks (Hall et al., 1998), hierarchical level in organizations (Jago & Vroom, 1977), situational context (Podsakoff, Todor, Grover, & Huber, 1984), and organizational (Schein, 1985) or societal culture (Erez & Earley, 1993). The contingent nature of leadership processes is also illustrated by research focusing on the relation of leader behavior to performance. (See reviews by Fiedler, 1967; Kerr, Schriesheim, Murphy, & Stogdill, 1974; Lowe, Kroek, & Sivasubramaniam, 1996; Podsakoff, MacKenzie, & Bommer, 1996.)

A major problem, however, is explaining how leaders could be sensitive to all of these factors, particularly when one recognizes that leader behavior often changes on a moment-to-moment basis in response to situational demands. One feasible process explanation is to generalize from our discussion of person perception and propose that leaders continually recreate behavioral schema (e.g., scripts) using connectionist networks that are sensitive to many contextual constraints such as those noted above. That is, the center section of Figure 12.1 would represent a script rather than a prototype schema. One advantage of a connectionist network as a model of integration for contextual information is that due to parallel processing, it can quickly combine such information into perceptions, expectations, or scripts to guide behavior.

It is important to note, however, that we are not arguing that leadership perceptions and leadership behavior are generated by the same specific schema. Rather, we suggest that initially, behavioral schema are generalizations of perceptual schema, but initiating behavior involves different processes than forming social perceptions, which could be expected to eventually produce unique schema. For example, enacting behavior involves motivational systems that pertain to forming behavioral intentions and evaluating task and social feedback. These aspects are not necessarily part of social perceptions. Such factors suggest that with experience, the schema which produce behavior will become differentiated from perceptual schema in order to incorporate constraints from motivational and social feedback processes. However, the same general *type* of schema, that is a connectionist network which incorporates many situational constraints, could be used to explain the generation of contextually sensitive guides to leadership perceptions and leadership behavior.

Adopting this broader perspective on the origins of leader behavior raises many interesting questions for social psychologists. One question concerns the nature and operation of the processing structures that translate these broader constraints into behavior. We

have already suggested that connectionist models may provide a reasonable candidate for such a structure, yet the specific architecture and processing mechanisms of such networks remain to be determined.

Another question concerns the source of such networks. Our suggestion that perceptual prototypes develop over time from experience implies that the nature of relevant learning mechanisms would be critical. Supervised learning via a delta rule is a common mechanism in many types of networks (e.g., Bechtal & Abrahamsen, 1991; Overwalle, 1998). Basically, with learning via the delta rule, weights connecting units are adjusted in proportion to the discrepancy between actual outcomes and some relevant standard. In training such networks, standards are often provided internally by another network; but in real-life situations, social feedback may be the ultimate source of such standards. Thus, the development of behavioral schema through experience may itself be a social process involving both leaders and followers. For example, the notion that leaders behave differently toward in-group as compared to out-group members was a fundamental insight in the literature on leader-member exchange (Graen & Scandura, 1987). What has not been considered is the possibility that leaders are "taught" these different styles by different types of subordinates.

An additional question is whether contextual adjustments to behavior reflect on-the-spot processing, as we have suggested that this often occurs in the contextualization of leadership perceptions, or in the use of pre-existing memory structures that are cued by highly specific contexts. Ironically, the potential importance of such issues to the leadership field is illustrated by recent work on traits associated with leadership. Meta-analyses of earlier trait research (Lord et al., 1986) emphasized qualities like masculinity, decisiveness, and intelligence as characteristics associated with leadership emergence; more recent meta-analyses have also found self-monitoring abilities of leaders and behavioral flexibility to be additional predictors of leadership emergence (Keeney & Marchioro, 1998).

Zaccaro, Gilbert et al. (1991) formulated a convincing argument that the trait of social intelligence is a requirement for leaders who operate in open, dynamic systems. They stressed that social intelligence has two components: (a) *social perceptiveness* which allows quicker and more fine grained understanding of other individuals and social units; and (b) *behavioral flexibility* to adjust behaviors to new tasks or social demands. Research showing that behavioral flexibility is associated with leadership comes from two sources. One source is experimental studies using rotational designs in which subjects are rotated across groups or tasks. This research shows that stable individual differences are associated with leadership emergence (e.g., Kenny & Zaccaro, 1983) and that these leaders appear to be changing their behavior to meet task demands (Zaccaro, Foti et al., 1991; Hall et al., 1998; Karakowsky & Siegel, 1999). The second source involves linking individual differences in self-monitoring capacity with leadership emergence or perceptions. While self-monitoring has a component associated with social perceptiveness, as Zaccaro, Gilbert et al. (1991) noted, it is mainly a measure of behavioral flexibility.

This research on social perceptiveness and behavioral flexibility raises important information-processing issues related to leadership. Zaccaro, Gilbert et al. (1991) maintained that leaders who were high on social intelligence have more elaborate perceptual and behavioral schema. They function essentially as expert processors, who directly map highly

specific perceptual categories into situationally appropriate responses. Following such logic, social intelligence might be viewed as an accumulation of many situation-specific productions, which is a perspective on highly skilled behavior advocated in other areas (Anderson, 1996). Others, most notably Wofford and Goodwin (1994), take a more cybernetic approach which emphasizes the role of feedback and adjustments over time to explain how leader behavior fits to situational requirements. Our emphasis on constraint-driven *recreation* of perceptual and behavioral schema suggests a third possibility, namely, that relatively automatic processes can integrate new situation-specific patterns with behavioral patterns that have been developed through experience to create new, situationally appropriate perceptual and behavioral schema (see E. R. Smith & DeCoster, 1998, Simulation 3). To us, this explanation has advantages in understanding adaptation to new situations as well as explaining creativity, a capacity Mumford has argued is essential to effective leadership, particularly in ill-structured situations (see Mumford & Connelly, 1991).

Partitioning of variance

Research clearly shows that leadership behavior is dynamically determined by a combination of situation, task, subordinate, and leader factors, yet we are aware of no attempts to *systematically* partition variation in leader behavior into these components, which could be done using rotational designs examining leadership behavior rather than perceptions as the dependent variable. Perhaps the most systematic assessment of leader behavior is the taxonomic work by Fleishman and colleagues (Fleishman, Mumford, Zaccaro, Levin, Korotkin, & Hein, 1992) which provides a solid basis for further investigations of leadership behavior, but does not provide much indication of the relative importance of various antecedents of leader behavior.

One area, which has focused on multiple determinants of leader behavior, is research on participative decision making. Research in this area tends to find stable differences among individuals in the tendency to use participative versus autocratic decision procedures, although situational factors tend to have a much larger effect. Hill and Schmitt (1977), for example, found individual differences accounted for 9%, and decision attributes 39%, of the variance in participativeness. This result is consistent with the general trend in the participative decision-making literature for situational factors to explain considerably more variance in participativeness than individual differences among leaders. It is also consistent with our argument that tasks produce powerful constraints on leadership behavior.

Level of analysis

Most of the literature on leadership behavior adopts an individual level of analysis, conceptualizing leadership styles or behaviors as arising mainly from qualities of leaders, not from complex interactions among system components. Adequate theory development should take a more comprehensive perspective. However, specifying the appropriate level of analysis for leadership theory is complex both statistically and theoretically.

Research using the Vroom–Yetton (1973) model to analyze participation in decision making illustrates some of the level of analysis issues involved in theory development. According to the Vroom–Yetton model, one critical problem attribute in determining subordinate acceptance of decisions is whether subordinates share organizational goals. Leaders whose subordinates share organizational goals are likely to be more participative than leaders of subordinates who do not share organizational goals because their subordinates are more likely to accept organizational decisions. Such effects clearly imply a dyadic level of analysis since both leader and follower factors affect leader participative behavior. That is, adopting our perspective, follower goal acceptance serves as a constraint on (i.e., input into) schema specifying appropriate behavior to leaders. However, Jago and Vroom (1977) also report that participativeness varies with hierarchical level in organizations, with hierarchical level explaining approximately 20% of the variance in participation. These effects imply that a dyads-within-collectives (hierarchical level) level of analysis would be appropriate if situational norms for participativeness increased with hierarchical level. Our theoretical perspective would then suggest that hierarchical level provides another important constraint. However, since subordinate acceptance of organizational goals may also vary with hierarchical level (higher level leaders are more accepting of organizational goals, in part, because of their greater tenure), what looks like a normative effect for hierarchical level may in fact merely be a dyadic-level effect that varies with hierarchical level.

If one assumes that behavioral tendencies are associated with the accessibility of relevant schema, as much of the priming literature implies (e.g., Bargh, Chen, & Barrows, 1996), then one could investigate the effects of various contextual constraints on schema accessibility to address levels issues. For example, participative behavior should be more likely when participative scripts are more accessible than autocratic scripts. Dyadic-level analysis would be appropriate where leader and follower factors *jointly* influence the accessibility of participative scripts. Collective levels of analysis would be suggested if higher level constructs like group norms or organizational cultures strongly influenced participative script accessibility. Such theory-driven approaches to levels issues provide a natural complement to statistical approaches.

The literature on leader–member exchanges (LMX) is clearly unique in focusing on the dyadic level of analysis rather than explaining leadership as a function of individuals or situations (Gerstner & Day, 1997). However, the focus of this research has been on how LMX relates to various outcome variables not on dyadic determinants of specific leadership behaviors. Gerstner and Day's (1997) meta-analysis reports significant positive correlations of LMX with perceived performance, satisfaction, organizational commitment, role clarity, and member competence, and negative correlations with turnover intentions. However, even here where the theoretical focus is at the dyadic level, one must empirically determine whether correlations in fact reflect dyadic-level processes. For example, Engle and Lord (1997) reported that LMX was highly related to liking of one's dyadic partner, which is a very common finding in the LMX literature (Duarte et al., 1993; Liden et al., 1993; Wayne & Ferris, 1990). However, in a later work Hall, Makiney, Marchioro, Lord, and Engle (1998), using latent variable analysis to decompose this correlation, showed instead that this correlation primarily reflects individual-level, not dyadic-level phenomena. Thus, even when theory points to a particular level of analysis,

it needs to be empirically substantiated. Substantiation may take the form of statistical analysis or it could also involve investigation of whether the accessibility of cognitive schema relevant to leader–follower exchanges were determined primarily by leader, follower, or the interaction of leader and follower qualities.

In sum, leadership research has not focused much on the antecedents of leadership behavior, focusing instead on its consequences for understanding performance or satisfaction. This neglect of antecedents stems mainly from the common assumption that individual differences in traits or personality profiles ultimately caused leadership behavior. Consequently, we have little systematic research that determines the relative importance of various determinants of leader behavior, nor do we find much careful evaluation of level of analysis issues with respect to leadership behavior. (However, see Dansereau & Yammarino's (1998) edited volume on this topic.) Future research should more carefully address such issues employing both newly developed statistical techniques and more process-oriented approaches based on the accessibility of behavioral schema.

Another issue that needs to be addressed by future research is the dynamic nature of leadership processes. Almost all measures of leadership behavior use questionnaire ratings taken at one point in time. However, Vallacher and Nowak (1994) have recently made a convincing case that social processes are much more dynamic, changing on a moment-to-moment basis. Hanges and colleagues (Brown et al., 1999; Hanges, Lord, Day, Sipe, Smith, & Brown, 1999; Sipe & Hanges, 1997) have adopted Vallacher's mouse measurement technique to leadership perceptions, finding substantial moment-to-moment changes in leadership perceptions as leadership processes change within groups. Further, both Brown et al. and Hanges et al. find that dynamic measures reveal gender biases in leadership perceptions that are not nearly as detectable using static measures. Brown et al. suggest that dynamic, connectionist, constraint satisfying models of perceptions are capable of explaining such moment-to-moment changes in perceptions as well as the biases associated with target (or perceiver) gender.

We suggest that connectionist models could also be applied to understanding how leaders dynamically adjust their behavior over time as task or social factors change.

Social Influence

A good example of leadership behavior, which fits with our position that leadership results from the confluence of multiple factors, is social influence. This topic is not only important to our discussion because effective leadership is associated with influence but also because influence clearly reflects a process involving actor and target components. Actors' choice of behavior and targets' responses to influence attempts are based on the fit of those behaviors with their definition of what is appropriate. Influence is an iterative process, with the reactions of the target influencing the subsequent influence attempts of the agent, and thus, influence fits well within a dynamic approach.

Leadership, influence, and power are three terms that have often been used in connection with each other, but without any formal definition of their relationship. *Influence* is the process by which an individual (the agent) chooses certain behaviors with the

belief that those behaviors will cause a desired change in the behavior of another individual (the target) that would otherwise have not occurred (Barry & Watson, 1996; Katz & Kahn, 1966). *Power* has been defined as the capability to exert influence (Ansari, 1990; French & Raven, 1959; Katz & Kahn, 1966; Yukl, 1998). Power refers to potential influence, but influence does not have to be enacted for power to exist. In contrast, influence must be attempted for it to be identified. Thus, power is perceptual, but influence is behavioral. In addition, power is often conceptualized in terms of dependency, such that one person is said to have power over another if the latter's dependence on the former is greater than the former's dependence on the latter (Barry & Watson, 1996). Thus, power is seen as an outcome of the social situation, whereas influence is seen as something an individual causes to happen.

Underlying processes

Social influence is generally viewed as a process between an agent and a target, however, the process is not as simple as the definition implies. Many of the theories concerning influence processes focus on the role of cognitions. For example, Tedeschi and colleagues (Tedeschi, Bonona, & Schlenker, 1972; Tedeschi, Schlenker, & Lindskold; 1972) emphasized the role of rationality and explicit processing. Agents are proposed to rationally judge the probability of successfully influencing the target, while the targets are proposed to rationally determine the expected value of compliance versus non-compliance. Kelman (1974) focused on the perceptual processes of the target that connect the agent's behavior to the target's response. According to Kelman, a successful influence attempt occurs when the target perceives the situation to have motivational significance, the agent to be necessary in achieving the target's goals, and the behavior to be relevant. Dillard (1990) viewed influence as goal-planning-action sequences. Influence is proposed to be goal driven for both agents and targets. Agents must decide whether and how to influence, while targets must decide whether and how to resist. Bruins' (1999) Power Use Model suggests that agents judge targets as either out- or ingroup members and then choose influence tactics accordingly. Soft tactics (e.g., tactics such as reasoning that give targets more freedom to resist) are used for ingroup members; whereas hard tactics (e.g., tactics such as sanctions that give targets little room for resistance) tend to be used for outgroup members.

In addition to cognitive processes, various situational factors contribute to the influence process. For example, Marwell and Schmitt (1967) emphasized the role of social norms, Cobb (1984) focused on the formality of the situation, and Raven (1992) viewed situational factors as "preparatory devices" that influence the effectiveness of various power bases. Bruins' (1999) Power Use Model also suggests that contextual characteristics influence the labeling of targets as in- or outgroup members, which as we previously noted, then affects the influence tactics that are used. Other work specifies the antecedent conditions that drive the influence process. Porter, Allen, and Angle (1981) focused on the recognition of opportunities, the decision to engage in influence, and the selection of the influence agent. Cobb (1984) considered the psychological orientation, the political skills, and the personal power base of the agent and the readiness and ability of the target to

act. In Marwell and Schmitt's (1967) model, emphasis is given to "previous learning," which they contend results from the past experience of the agent in the current situation, past interactions with the target, and the personal resources of the target.

In all likelihood, these various situational and antecedent conditions act simultaneously, influencing both the agent and the target at an unconscious level. A connectionist model can better explain the effects of these various antecedent conditions on both the agent and target than the rational models often proposed because of the parallel processing ability of connectionist models. Connectionist networks could quickly and simultaneously incorporate the contextual factors, past experience, and cognitive states already proposed to affect the influence episode, thus allowing for more flexibility and contextual sensitivity in the agent's choice of behaviors and the target's reaction to the agent.

Partitioning of variance

Although the influence process necessarily involves the agent, the target, and the situation, we are unaware of any endeavor to systematically partition the variance of influence attempts into these three factors. However, numerous studies have examined agent, target, and contextual factors individually. Research examining effects of agent factors has shown that individuals with lower self-confidence avoid using personal powers of persuasion to influence others (Goodstadt & Kipnis, 1970). Personality factors have also been shown to play a role in the agent's use and choice of influence tactics. For example, individuals high on extraversion, self-monitoring, and desire for control more frequently engage in influence attempts (Caldwell & Burger, 1997). Some studies have shown that certain characteristics of the target affect the influence attempt. The status of the target has been shown to significantly affect which influence tactic the agent chooses, such that agents tend to use more rational tactics with higher status targets (Kipnis, Schmidt, & Wilkinson, 1980). Influence tactics have also been shown to vary with the amount of resistance given by the target (Kipnis et al., 1980).

Several situational factors have also been shown to affect the influence attempt. For example, if an organization is unionized, agents are more likely to use ingratiating tactics when influencing subordinates (Kipnis et al., 1980). The importance of the task also increases the effectiveness of influence attempts (Baron, Vandello, & Brunzman, 1996). Thus, research has looked at agent, target, and situational factors individually, but no one, as yet, has combined the three sets of factors in a single study to conclude which factors have a greater impact on influence attempts.

Level of analysis

Research on social influence has generally taken either an individual approach by focusing on the characteristics of the agent, or a dyadic approach by emphasizing the match between the agent's behavior and the target's perceptions. Most of the influence process

models, even if their emphasis is on the agent, assert that the perceptions of the target are crucial to the process.

Any given level of analysis also can be examined from two alternative perspectives – wholes versus parts. A *wholes* perspective considers only differences *between* individuals, dyads, or groups. A *parts* perspective, on the other hand, considers only *within* entity differences (Dansereau, Alutto, & Yammarino, 1984; Hall & Lord, 1995). In general, social influence is viewed from a wholes perspective, with the belief that influence processes vary between dyads. However, several of the models actually take a parts perspective, positing that influence is an iterative process of re-evaluation and implementation. For example, Kipnis (1974) discussed the “metamorphic effects of power,” which suggests that the influence attempt alters the agent’s self-concept and perceptions of the target. Furthermore, Raven (1992) stated, “The influence attempt, successful or unsuccessful, has very likely changed both the influencing agent and the target, changed their perceptions of themselves, changed their perceptions of the other” (p. 234).

In summary, the current standing in research on social influence suggests the need to consider antecedent factors, to incorporate the social context and the reaction of targets, and to take a more dynamic approach. All three of these suggestions can be incorporated into a model where connectionist networks “settle in” to schema representing appropriate influence behaviors and perceptions of the target.

Comparison of Leadership Perceptions, Behavior, and Influence

Table 12.2 shows several general processes and their application to leadership perceptions, leader behavior, and influence. Most of these principles have been explained previously. However, several points require further comment. Of primary importance is our assertion that settling-in processes subject to situational constraints is a fundamental advantage of connectionist level theorizing in leadership and influence domains. The strength of connections from various system level inputs, in turn, affects the level of analysis that is appropriate. We have suggested that levels of analysis issues are critical in theory development and also in statistical analysis. Thus, whether the focus is on perceptions, behavior, or influence, strong constraints from followers mean that dyadic levels of analysis are needed, whereas strong constraints from higher level units (groups or organizations) imply that more aggregate levels of analysis are required. The strength of constraints, in turn, reflects the consistency of past experiences and learning from such experiences, factors which can be incorporated into weight changes in connectionist units. As a consequence, statistical levels of analysis issues should have an analog in the contextual effects on the accessibility of schema.

An additional issue pertains to the sources of variance issue that we examined with respect to each dependent variable. When the internal self-activating aspects of network components are strong (see E. R. Smith’s 1996 discussion of recurrent networks), gap filling will predominate and many patterns of activation from contextual factors will settle in to similar patterns of network activation. In such cases, external influences will

Table 12.2. Integration of General Principles across Areas

<i>General principles</i>	<i>Leadership perceptions</i>	<i>Leadership behavior</i>	<i>Influence</i>
<i>Settling-in</i> recreates rather than retrieves schema in a contextually sensitive manner	Prototypes and casual explanations altered based on inputs (constraints) that vary with context	Behavioral schema altered based on situational constraints producing flexibility and creativity	Influence strategies altered based on contextual constraints producing flexible use of influence strategies
<i>Level of analysis</i> reflects the strength of constraints from different system components	<i>Individual</i> – experience-based constraints on prototypes <i>Dyadic</i> – constraints are interpersonal (e.g., liking) <i>Group</i> – aggregate constraints on prototypes (e.g., norms, culture)	<i>Individual</i> – behavior depends on various learning histories <i>Dyadic</i> – relational factors influence behavior <i>Collective</i> – aggregate constraints on behavior (e.g., norms, culture)	<i>Individual</i> – social influence strategies reflect past learning <i>Dyadic</i> – constraints from interpersonal relationship (e.g., subordinate performance) <i>Group</i> – constraints from norms or culture
<i>Easily activated schema</i> created by strong internal and rich external connections	Source of preferred leadership prototype or self-schema	Source of preferred behavioral style	Source of preferred influence style
<i>Gap filling</i> in strongly connected networks activates entire recurrent network from subset of inputs	Source of consistent interpretation and reduced contextual sensitivity	Source of consistency in behavioral styles and temporal overlap of behavior and understanding	Source of consistency in influence strategy and interpretation of antecedent conditions
Learning via the delta rule used to adjust weights connecting relevant units	Leadership prototypes and causal explanations fit to social standards	Behavioral schema learned in response to social or task standards	Influence strategies based on success of influence attempts
<i>Generalization</i> depends on gap filling and activation of multiple schema	Prototypes generalized or hybrids developed (e.g., female, leader)	Behavioral styles generalized or new behaviors explored	In new situations familiar influence tactics used singly or in combination

be reduced and strong individual-level (e.g., trait) effects will occur, with individual differences in the content of networks being the predominant determinant of differences in leadership behavior, perceptions, or influence. However, when the internal linkages are weaker, and connections to social system components are stronger, then dyadic or more aggregate units should strongly influence behavior.

As with most connectionist systems, learning results from changes in weights connecting units. Learning via a delta rule emphasizes comparisons of network outputs to

standards, which are usually another network. Amount of changes in weights is proportional to the difference between outputs and relevant standards. Comparison standards may reflect cumulative perceptions of social factors like norms or affective reactions of others, or it can be internally based arising from an individual's goals or values. Generalization to new situations (defined by new input patterns) depends on gap filling. Also, the simultaneous activation of multiple networks can be used to explain creativity (see E. R. Smith & DeCoster, 1998, Simulation 3).

Conclusions

We have emphasized the synthesis of social-cognitive thinking, particularly developments in neural network models, and leadership perceptions, leadership behavior and influence. However, our coverage of this topic needs further development to illustrate interactions among components. For example, the three topics we have covered are themselves inter-related: When one is perceived as a leader, influence is more likely to be accepted; compliance to influence attempts increases perceptions of leadership for both observers and actors; self-perceptions of leadership affect leadership behavior tendencies. More complex interrelations also exist. For example, Goodwin, Operario, and Fiske (1998) note that being a leader promotes motives for social control, which in turn, leads one to use stereotypes to classify members of groups that may potentially compete with the leader for power. Such processes tend to bias individuals in power (typically males) against seeing females as leaders (Eagly, Makhijani, & Klonsky, 1992), which may be part of the explanation for "glass ceiling" effects.

We should stress that leaders, particularly in work situations, are part of systems with required outputs. Hence, factors such as group or organizational performance are intimately related to leadership. We have touched on performance knowledge as an input to social perceptions, but we have not addressed the relation of leaders or specific leader behaviors to organizational performance. Currently, there is no accepted theory indicating which behavioral styles produce superior organizational performance. This is due in part to the contextual dependence of such relations, but also because performance depends not on style per se, but on how effectively a leader uses a particular style. The general question of whether leaders influence organizational performance has been addressed (see Thomas, 1988 or Lord & Maher, 1991), with the general conclusion being that leaders are important sources of organizational performance. Newer thinking emphasizes the role of top management teams, not just CEOs, as determinants of organizational performance, with a critical question being the degree of constraints on strategy and innovation arising from team composition factors (Hambrick, Cho, & Chen, 1996). Such issues could be addressed directly by extending the type of theoretical approaches developed in this chapter. For example, the characteristics of each individual in a group could be incorporated as contextual constraints in Figure 12.1. Where homogeneity existed, strong constraints would occur; where heterogeneity occurred, constraints would tend to cancel out, producing minimal effects.

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CHAPTER THIRTEEN

Group Processes and the Construction of Social Representations

Fabio Lorenzi-Cioldi and Alain Clémence

Social representations can be defined as commonsense knowledge about general topics (e.g., AIDS, computers, gender, health, intelligence, psychoanalysis, work) that are the focus of everyday conversation. The theory of social representations, originally developed by Serge Moscovici (1961/1976) on the basis of interdisciplinary and historical analyses, built on the premise that people use more than one mode of reasoning. This premise has its roots in Emile Durkheim's (1912/1995) important distinction between collective and individual representation. For Durkheim, individual representations were internal states that might not be shared with other people. In order for them to be communicated they had to be transformed into thoughts (words, images, and symbols) by the collectivity.

When the anthropologist Lévy-Bruhl (1925/1926) examined material collected from what he called "primitive" cultures, he used the notion of collective representations to distinguish between two modes of thinking: a rational one, typical of "civilized" cultures, and a "mystic" one, typical of "primitive" cultures. This distinction was also expressed by Piaget (e.g., 1932) when he characterized childish operative thinking and adult formal thinking. Whereas for Piaget the latter gradually replaces the former during the course of cognitive development, for Moscovici adults continue to reason in a childish way (mystic, representative), even if their thoughts are based on formal, rational, or logical principles (Moscovici, 1981). In everyday life, various kinds of constraints can lead us to make decisions or adopt positions without following logical rules. For a layperson, the content of thought becomes central in the organization of knowledge, while formal procedures are privileged in scientific thinking (Clémence & Doise, 1995; Moscovici & Hewstone, 1983). The general theoretical stance taken by social representations theory is grounded in this proposition (see Doise, 1990; Purkhardt, 1995; for critical discussions).

In this chapter, we describe a perspective based on social representations theory to analyze commonsense knowledge and group processes. By stressing both the social specificity of everyday thinking and the influence of scientific thinking upon it, social representations return to the central core of social psychology. First, we outline the present state of the theory of social representations. Particular attention is devoted to the anchoring process, which is illustrated by research on rumor, in order to understand the diffusion of information among social groups. We then discuss the concept of group, by contrasting the social cognition and the social representation approaches. By focusing on groups' social position relative to other groups, we show how groups generate different social representations of themselves and of the world. Gender and health are discussed as illustrations of these processes.

A Dynamic Approach to the Processing of Meanings

Thinking in everyday life is oriented by the need to resolve abstract and/or obscure questions: How intelligent is my child? What are the origins of AIDS? Why are some people more violent than others? To answer such questions, we rely on the way in which intelligence, the origins of AIDS, or violence are defined and discussed. Particularly, we rely on the knowledge exchanged and shared around us in the groups in which we are embedded. We can, of course, adopt an original position, but even then we have to refer it to common points of reference, that constitute the shared knowledge environment within which we exist. To understand this process, we need to understand the way in which reasoning is based in cognitive functioning (categorization, inferences, etc.). However, it is probably more important to know how and why we give specific significance to some information relative to other information. Cognitive processes are controlled and oriented by what Moscovici (1961/1976) has called the normative meta-system, which operates through two sociocognitive dynamics: objectification and anchoring.

Social orientations toward shared meanings

Objectification refers to the process of transforming abstract information into concrete knowledge, through communication. This process produces figurative, metaphorical, or symbolic meanings, that become shared reference points for a specific domain. There is some debate over the content and structure of these lay theories. The structural approach emphasizes the idea that the content of a social representation is organized around a central nucleus composed of a few consensual meanings (see Abric, 1984; Augoustinos & Innes, 1990), whereas the dynamic approach maintains that social representations comprise different, contrasted kinds of meanings, and that people's knowledge is made up of this network of variations (see Doise, Clémence, & Lorenzi-Cioldi, 1993). However, both approaches have clearly demonstrated the power of the process of objectification in transforming information which is diffused in society. Other theoretical perspectives support this analysis (see Hardin & Higgins, 1996; Levine, Resnick, & Higgins, 1993, on shared

cognition, or the theory of the epidemic diffusion of ideas documented by Sperber, 1990). The objectification process is relatively well developed (see Flick, 1995; Jodelet, 1989; Markova & Farr, 1995; Wagner, Elejabarrieta, & Lahnsteiner, 1995); therefore, in this chapter, we focus on and develop the anchoring process.

Because social representations are elaborated through debate, different points of view emerge during the transformation of abstract information into concrete meanings. Divergent positions are publicly expressed by people who belong to different groups – groups which actively attempt to define abstract information from their own distinctive points of view. Individuals use normative rules grounded in the ideas, values, or beliefs of their own groups, to analyze ambiguous or mysterious aspects of changing lay theories – their thinking is anchored in, or positioned by, the perspective of their own group. This raises the question of precisely how positional differences among individuals are organized by variations between individuals and between the normative rules of different groups (Doise, Clémence, & Lorenzi-Cioldi, 1993). We argue that the social representations approach makes it possible to predict the sorts of inferences that people make, in ways that go beyond that offered by more purely formal (cognitive) analyses (see also Billig, 1985).

In contrast to early “normative” approaches to social cognition (e.g., Nisbett & Ross, 1980), social representations should not be considered to be false, weak, biased, or deficient forms of knowledge (see Bauer & Gaskell, 1999). More recent “pragmatic” approaches to social cognition may emphasize the functionality of commonsense representations in everyday life (Fiske, 1992; Fiske & Leyens, 1996), but still they tend to separate the personal and the social levels of analyses. In contrast, the social representations approach focuses precisely on the link between personal and social levels of analysis. Identities, attitudes, and attributions become expressions of specific social representations. As Moscovici (1998) puts it:

Contrary to scientific and ideological representations, constructed following the demands of formal logic on the basis of fundamental terms all perfectly defined, [. . .], the representations of common sense are, in one or another, ‘cross-bred’. That is to say that ideas, linguistic expressions, explanations of different origins are aggregated, combined, and regularized more or less like several sciences in a single hybrid science, like several idioms in a créole language (p. 238).

Let us start with a discussion of the way the social representations approach tackles the phenomenon of rumors.

Rumors as an Anchoring Process

Consider the information below, which was run as a headline by the German newspaper *Kölnische Zeitung* when the German army captured the Belgian city of Antwerp in 1914 (Kapferer, 1987, pp. 52–53).

With the advertisement of the capture of Antwerp, one made sound the bells.

This same event was heralded by a French newspaper *Le Matin* as: "According to the *Kölnische Zeitung*, the clergy of Antwerp was obliged to ring the bells when the fortress was captured." The English *Times* reported: "According to *Le Matin*, Belgian priests who refused to ring the bells after the capture of Antwerp were deprived of their offices," and the Italian *Corriere della Sera* reported: "According to the *Times*, the unfortunate priests who refused to ring the bells after the capture of Antwerp were sentenced to hard labor." Finally, *Le Matin* revisited the event, reporting: "According to the *Corriere della Sera*, it is confirmed that the barbarian conquerors of Antwerp have punished the unfortunate priests, who heroically refused to ring the bells, by hanging them on the bells, the head down."

This sort of transformation can quite easily be analyzed from a cognitive perspective. The initial information itself was ambiguous (where were the bells ringing?) and required more complete interpretation. To disambiguate the information people relied on knowledge stored in memory, in this case easily accessed and quickly retrieved stereotypical information about German troops. Consequently, new information was reinterpreted in the context of prior stereotypical knowledge with the result that the original stereotype may have been confirmed and strengthened (Sherman, Judd, & Park, 1989).

However, there is an inconsistency inherent to this line of reasoning. The notion of stereotypes assumes that, in 1914, French people shared the same representation of German troops. But we also assume that individuals differ in their representations. From a social cognition perspective this inconsistency is resolved by contrasting general beliefs with individual motives, knowledge, expertise, and so forth. Specifically, the meaning given to new information depends on the content and structure of prior knowledge. For instance, Vallone, Ross, and Lepper (1985) showed that individuals interpret media coverage of an issue on which they are strongly committed as biased against their own position. Fiske, Kinder, and Larter (1983) demonstrated that the use of prior knowledge to interpret information in a political arena depends on the expertise of the individual. Devine (1989) based her approach to stereotyping on the struggle between automatically activated stereotypes and personal beliefs (see Abelson, 1994, for a general discussion of these two coacting systems).

Automatic thinking appears to refer to public opinion or to consensual belief (a stereotype is easily accessible for everybody), whereas controlled thinking refers to individual variations and dissension (some people express a position against, and others in support of, the stereotype). Furthermore, some stereotypes are more automatic than other ones, and the strength of dissension differs according to the content under scrutiny. If the cognitive approach offers a powerful understanding of how people think about a problem, it neglects to explain why people consider the problem in the first place.

Emergence of different meanings

The social-communicative process associated with meaning transformation resembles that associated with the development and promulgation of rumors. The classic analysis of rumor conducted by Rosnow and his colleagues (Esposito & Rosnow, 1984; Rosnow, 1980, 1988; Rosnow, Esposito, & Gibney, 1988) is mainly concerned with the effects of

personality traits (anxiety and uncertainty) and of message characteristic (ambiguity) on rumor circulation. The social representations approach deals not only with how information circulates and changes, but also with why this information itself interests people.

Representative thinking is based more on the specific content of the information than on formal processes. Transformation of information depends primarily on the normative meta-system of a social context (often reduced to a question of relevance – see Sperber & Wilson, 1986), and variations between individuals in the meaning given to the information depend primarily on the normative principles adopted by specific groups.

Consider once again the announcement by the *Kölnische Zeitung* (see above). If the normative context is not given, we are unable to understand why the information was consensually interpreted by the French, Italian, and English media as reporting a barbarian action by the conquering Germans. The ambiguity of the information could have been resolved in many other ways and there is no reason why the French, Italian, and English media should necessarily have been in agreement. The specific outcome can only be predicted from knowledge of the wider historical context of the outbreak of World War I, in which relatively widely shared negative stereotypes of Germans had developed through widespread and heated debate about relations with Germany.

More generally, the emergence and diffusion of a rumor depends first on the need to understand an issue that has no clear and consensual meaning. If the issue becomes a focus of public debate, different groups propound different interpretations, and a process of normalization occurs (e.g., Moscovici, 1976; Sherif, 1936). The normalization process is not, however, a straightforward averaging process in which a compromise among divergent positions is reached. Groups vary in status, power, prestige, and so forth, and thus to the extent that a particular interpretation is closely associated with a particular group, marginalized groups (minorities) will have relatively little impact on the final representation – people would not want to become assimilated to a minority position through incorporation of minority perspectives (see Moscovici, 1980; Mugny & Perez, 1991; also Martin & Hewstone, this volume, chapter 9). However, ideas are very often dissociated from their authors, and thus their group origins, during their circulation in the sphere of public debate. Thus, group identity influences can often be weak, and what really matters in the construction of a shared representation is the content of the information itself.

The case of AIDS offers a good example of the construction of a social representation (see Herzlich & Pierret, 1988; Markova, 1992). The public diffusion of medical information about AIDS, allowed people to acquire new knowledge about AIDS and engendered substantial public debate about what was considered a strange and frightening disease. Different groups integrated medical information into their general theories. For instance, some Catholic communities developed the idea that AIDS was a divine punishment for sexual promiscuity and drug abuse. Other people, at least in Western countries, gradually acquired new knowledge about the means of transmission of the disease. However, this scientific knowledge, that was now widely shared among laypeople, did not explain how the HIV virus responsible for AIDS emerged in the first place. Different groups used this information in different ways, depending on their ideological perspective, to answer this question. Extreme right-wing groups anchored scientific information

in racist beliefs by claiming that the first cases of AIDS were observed in Africa. They believed that the disease was introduced to humans through Africans having sexual relations with monkeys that were contaminated by the virus. Another explanation was framed by Soviet propaganda and diffused among groups with a broadly anti-US socio-political agenda. Citing alleged experimental research conducted by scientists linked to the American government, members of these groups were convinced that the virus was produced in the laboratories of the CIA to contain demographic expansion in developing countries (see Grmek, 1990; Sontag, 1989). These two “theories” appeared at the beginning of the 1980s, shortly after the initial spread of the virus and of information about the virus. However, these “theories” continued to be publicly debated, long after the identity of their authors had faded. The disembodiment of these ideas, their dissociation from their group and ideological origins, would be expected to make them appear to many people to be more respectable and more worthy of serious consideration in making sense of AIDS.

Some support for this analysis comes from research conducted in Lausanne, a medium-size city in Switzerland (Clémence, 1997). Forty-one women and thirty-two men (mostly students) responded to a questionnaire measuring their knowledge about AIDS. Participants briefly described different aspects of AIDS, explained what they thought were the origins of the disease, and answered questions about HIV transmission and the fight against AIDS. Participants displayed appropriate knowledge about AIDS: 71% excluded all inappropriate risks of contagion (saliva, kissing, insect bites, sharing the same glass, sweat, sharing a swimming-pool, and shaking hands); 60% translated the AIDS acronym correctly; 96% strongly opposed the idea that AIDS was a divine punishment; and 72% expressed extreme sympathy with AIDS sufferers. Responses to the open-ended question about the origins of HIV offer more intriguing results. Responses were easily classified into three types of explanations: Two explanations corresponded to the “monkey” and the “laboratory” interpretations mentioned above, and the third was related to the idea of cleanliness. More complex and scientific explanations (e.g., virus mutation, alteration of the immune system) were grouped together.

As Figure 13.1 shows, a significant number of participants gave both the “monkey” and the “laboratory” explanations. These responses were not related to the educational level, age, or religion of the participants. The “hygiene” explanation was almost exclusively given by women (9 women, 1 man). The use of these explanations was, however, related to knowledge of the AIDS acronym. Specifically, participants who did not provide the correct translation of the AIDS acronym tended to adopt one of the three “rumors” (monkey, laboratory, hygiene) about the origins of AIDS. Moreover, those who cited the “monkey” explanation stressed the risk of being contaminated by saliva.

This study illustrates how minorities’ speculations, that are in public circulation but are unattributed to their minority group origin, can influence common knowledge. It suggests that the efficiency of the anchoring process depends, at least in part, on the prior knowledge people have of a specific issue. Research on human inference has well documented the formal and pragmatic way in which individuals use prior knowledge to interpret or create new data (e.g., Hastie, 1983; Snyder, 1981). What is underlined here is the fact that such knowledge can protect us from the acceptance of new explanations (see McLeod, Pan, & Rucinski, 1995). However, we did not have the opportunity in this

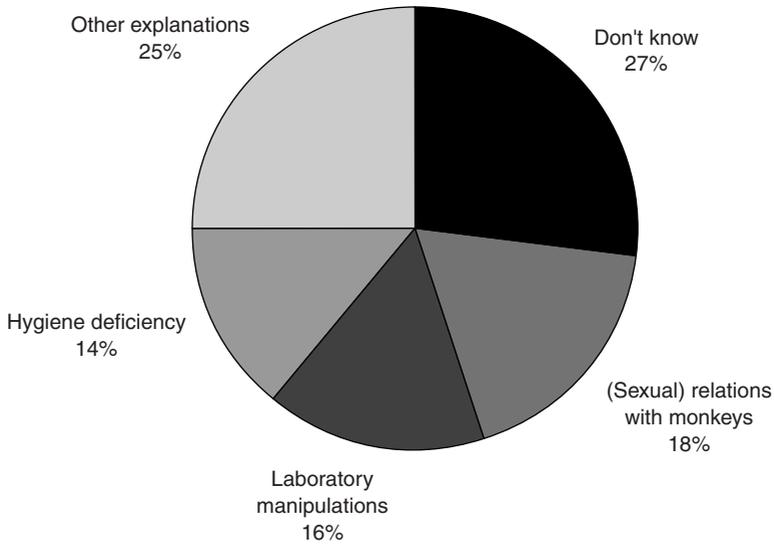


Figure 13.1. Explanations of the origins of AIDS.

study to investigate why some participants were influenced by the “monkey” or the “laboratory” explanations. We need to go further, to examine how pre-existing beliefs orient the anchoring of new theories.

Alteration of meanings by groups

The anchoring process explains how groups with different belief systems arrive at different everyday explanations for threatening events of which the origins are unknown, obscure, or ambiguous. Consider, for instance, the Martian invasion of Earth reported by Orson Welles in a radio broadcast on October 30, 1938 (part of a dramatization of H. G. Wells’s *War of the Worlds*). Listeners who were persuaded by this highly realistic broadcast were members of groups for whom such an invasion would fit well with their social representations. For members of closed religious communities, the invasion was interpreted as a sign of the end of the world; for patriots sensitive to military conflicts, it was an attack by a powerful foreign country; for anti-science movements, it was a catastrophic result of mysterious experimental research (Cantril, Gaudet, & Herzog, 1940).

In their classic research on rumor, Allport and Postman (1947) defined rumor as the alteration of a piece of information, resulting in a completely new signification. Their results suggested greater alteration when the information conflicted with beliefs to which a large group of people were strongly committed. For instance, participants made quite dramatic racial stereotype-consistent interpretive errors when information was actually stereotype-inconsistent – a flick-knife held by an elderly white woman was almost unan-

Table 13.1. Transformation of a Message during Transmission: Final Statements of Chains According to the Attitude Position of the Participants in the Chain*Attitudes toward mathematics in psychology**Positive*

A study was done in June, 1973. Geography students are better at mathematics than psychology students. One possibility is that psychology students have been taught badly.

There is a relation between success in mathematics and in psychology. 90% of people complain that they find it impossible to achieve success.

It has been established that a math student is successful in psychology; it has been established that a math student is good at teaching; it has been established that a math student is good at mathematics.

Negative

A study was performed among students on mathematics. One observed that they had better results.

A study conducted in 1970 among psychology students showed that they do not want to be taught maths. 80% said that the lack of maths does not hinder their work.

A study was done in 1974 on the importance of mathematics in psychology. The aim of the study was to minimize the importance of mathematics.

Note: Adapted from Rouquette (1975, pp. 116–124).

imously recalled as being held by a young black man. Subsequent research by Treadway and McCloskey (1989) has shown how a changed normative environment (since the mid-1940s) has reduced the tendency for participants to make such racially stereotypical recall errors. We suggest that this is evidence for anchoring rather than for social desirability effects.

Results of an experiment conducted by Rouquette (1975) illustrate how alteration is oriented by group beliefs. Using Allport and Postman's procedure, Rouquette transmitted a message to psychology students, stating that:

A study conducted during June, 1973, showed that students who had received good marks in mathematics achieved higher final results in psychology. The study also revealed that more than 87% of young psychologists regretted having not had sufficient mathematical training.

Participants were classified on the basis of their attitudes toward the role of mathematics in psychology. Chains of five students were constructed: Half comprised students with a positive attitude toward mathematics in psychology (positive chains), and half comprised students with a negative attitude (negative chains). Participants were shown all stages of the progression of the message for each of the types of chain, and were asked to give a final interpretive statement.

Final statements (see Table 13.1) show how the message was transformed in order to be anchored in participants' attitude toward mathematics. Those who expressed a positive attitude toward mathematics underlined the flawed training of psychology students

and/or the good results of mathematics students; those who had a negative attitude toward mathematics in psychology stressed that psychology students did not want mathematics to form part of their education.

Rumor diffusion is linked to group cohesiveness, particularly to the extent to which people feel that their membership status is threatened (Miller, 1991). The diffusion of unverified information that originates in high credibility sources such as leaders (Kapferer, 1987) is often, therefore, regulated by the group's more marginal members. For these marginal members, the anchoring of beliefs in previous thinking is facilitated by a strong desire to belong and re-establish their membership credentials, and thus strong adherence to the group's normative attitudes – the classic case of zealotry or neophytism. Several studies corroborate this general process. For example, classical stories based on a supposed dreadful action by a stranger (kidnapping of young women by Jewish tradesmen, death of a child as a result of poison introduced into supermarket food by gypsies, etc.) are more strongly endorsed by more marginalized members of the community, such as elderly women or mothers at home with young children (Morin, 1969; Walker & Blaine, 1991). These observations raise the question of what function social representations may play in the construction of groups, and in interaction between groups.

The Construction of Groups by Social Representations

Doise (1972) has developed a dynamic model of group relationships based on the critical role played in intergroup relations by social representations of other groups, outgroups. Doise argued that all encounters with outgroups, and thus all intergroup behavior, must be based on some meaningful representation of the nature of the outgroup that allows one to predict and plan action. Because both groups often have no choice other than to follow their outgroup orientation (e.g., to cooperate or to fight), the representation of the other group usually closely fits its behavior. Anticipated intergroup definitions are consolidated because they are successfully tested during encounters (see also Abric & Kahan, 1972). Such a dynamic suggests that social representations are closely articulated with the construction of groups' identities.

Groups as social representations

Among different studies dealing with the construction of group identity and social representations (e.g., Breakwell, 1993; De Paolis, 1990; Elejabarrieta, 1994; Jodelet, 1991), Duveen and Lloyd have developed a genetic approach to social representations in order to account for the social construction of gender (1986; Lloyd, 1987; Lloyd & Duveen, 1990). For Duveen and Lloyd, social representations are generated and transformed by three types of processes:

There are processes of *sociogenesis*, which concerns the construction and transformation of the social representations of social groups about specific objects, *ontogenesis*, which concerns

the development of individuals in relation to social representations, and *microgenesis*, which concerns the evocation of social representations in social interaction. (Duveen & Lloyd, 1990, p. 6)

The authors have examined how children adopt, and participate in, the social representation of gender. Infants are born into a world in which gender differentiation is highly structured. Although biological characteristics are used by others to assign infants to a gender group, these characteristics initially have no gender signification for infants themselves. The same is true for the environment around them, where many objects (e.g., toys, clothes) are socially marked (De Paolis, Doise, & Mugny, 1987; Doise & Mugny, 1984) in the sense that they are connected with gender relations. Young children form relationships with objects and people, organized by the social representation of gender. They gradually discover the gender meanings and orient their activity in a manner congruent with a gender category. This ontogenetic process leads children to adopt the meanings of the gender categories and then to participate in their further elaboration. The differentiation between gender groups begins with knowledge of a common sign system furnished by the social representation of gender.

Chombart de Lauwe (1971, 1984; Chombart de Lauwe & Bellan, 1979) has analyzed material to support the view that childhood is a social representation constructed by adults. Adults create a common image of “childhood” on the basis of a selective transformation of their own memories, discussion with other adults, and, particularly over the last century, the incorporation of experts’ views. This image is subject to change – for instance it has evolved from a “submissive child” model toward a more “autonomous person” model. Probably, for our purpose, the more interesting question is how do children interpret the models that adults present to them. Chombart de Lauwe and her colleagues suggest that children pursue two mixed goals: education and entertainment. First, children distil a limited number of simple prototypes of “heroes” or champions, for example the masculine adventurer, out of a large array of different and complex characters they encounter. Then, they social contextually anchor their heroes, by selecting models that are adjusted to their own social reality and by adding some of their own characteristics to the model. Thus, social reality constraints would generally make it difficult for girls, but easy for boys, to base their self-concept or identity on a masculine adventurer prototype.

The research by Chombart de Lauwe and Bellan illustrates how, through an anchoring process, a social representation generated by an outgroup (adults) organizes the construction of a social group (childhood) and contributes to the differentiation of subgroups (masculine and feminine childhood). The analysis of groups as social representations seems to offer a means of understanding how the content of social categories is elaborated. We now turn our attention to this question.

Mental and Social Representations of Groups

We have argued that the anchoring process depends primarily on group norms. However, group norms do not exclusively originate in the group member’s activities, interactions,

and thoughts within an ingroup frame of reference. Relations between groups have a critical impact. Groups are located in a network of intergroup relations that cause groups to vary quite dramatically in terms of their prestige, status, and power (see Hogg, this volume, chapter 3). This social positioning of a group with respect to all other groups has important consequences for the production of social representations. In this section, we discuss how the social positioning of groups impacts people's mental representations of groups and group membership.

Modern conceptions of category structure depart resolutely from an "all-or-none" Aristotelian conception of group membership. Instead, categories are now thought to be structured around prototypes so that a cluster of modal or salient attributes determine inclusion in a group (e.g., Rosch, 1981). The group's members are distributed around these typical features. Since each individual's characteristics match the prototype to a differing extent, a certain amount of within-group heterogeneity or variability arises from comparisons between group members: not all category members are entitled to be members of the category to the same degree. As a result, groups are distinguished one from another by fuzzy boundaries.

Even greater intracategory heterogeneity is granted by recent exemplar-based models, in which a mental representation of a group need not include abstract features or summary judgments about shared or modal characteristics. Social categories consist of a number of particular instances or exemplars drawn from personal contacts, learned from the media, and so forth. Group membership is not abstracted at the time group members are encountered, but is computed later on by taking into account the whole set of known group members.

These mental representations of category membership have various psychological implications. The most important one, in the present context, is that exemplar-based representations of groups are internally more differentiated and varied than prototype-based representations, which, in turn, are more internally differentiated than Aristotelian-based representations (Linville, Fischer, & Salovey, 1989; Park & Hastie, 1987; Park, Judd, & Ryan, 1991). Whereas the Aristotelian approach advocates group members' homogeneity and interchangeability within the group, the prototype approach, and more so the exemplar approach, allow greater intragroup heterogeneity. For the prototype model, for instance, group membership expresses itself in degrees of discrepancy between the prototype – an ideal and not necessarily real member – and the various individuals, who are also potential members of other neighboring categories. The prototype approach has recently been applied by social identity theorists to analyze social-identity contingent structural differentiation, and concomitant behaviors, within groups (see Hogg, 1996, this volume, chapter 3).

From the standpoint of social representations theory, the question becomes how does the social position of a group provide content to these mental representations in everyday thinking. As one of us has quite extensively shown, a crucial moderator of content is the perceived social status of the target individual (either oneself or another person) to whom the category applies (Lorenzi-Cioldi, 1988; Lorenzi-Cioldi & Doise, 1990). Experimental and correlational data suggest that people elaborate different mental representations of a group according to the socio-structural position of the group. Members of subordinate groups often conceive of themselves and fellow ingroup members as interchangeable persons, that is, as *aggregates*. Their personal features derive to a large extent

from features that are ascribed to their group as a whole. In contrast, members of dominant groups tend to conceive of themselves as a gathering of individuals endowed with a fair amount of uniqueness and interpersonal distinctiveness, that is, as a *collection* (cf. Boltanski, 1984; Bourdieu & de Saint Martin, 1978). Their identity is derived to a large extent from outside the group.

Collection and aggregate groups epitomize two opposing modalities of group membership. In an aggregate group, the emerging categorization model is Aristotelian, at best prototype-based: group members tend to possess all of the attributes that define the group at an abstract level. Conversely, in a collection group the model is exemplar-based, sometimes a mixture of exemplars and prototypes: each member endorses more or less strongly a subset of his or her group's attributes, or else, the group is made up of a juxtaposition of prominent instances. The group's features are then occasionally abstracted from consideration of the whole set of group members. (Note that Mullen, 1991, likewise, points to a tendency for individuals to apply different mental representations to groups differing by their size; that is, exemplar representations to majorities, and prototype representations to minorities.)

This distinction between social representations of dominant and subordinate groups has received significant empirical support (for a review, see Lorenzi-Cioldi, 1998). The important point here is that seemingly universal, antagonistic, and mutually exclusive mental representations of a group, such as those invoked by the Aristotelian, prototype, and exemplar-based approaches, become concurrent and compatible to a significant degree by taking into account the social positioning of perceivers and target group members.

The following sections show how social representations theory helps explain the emergence of these contrasting group representations.

Shared and group representations

Research in social and cultural psychology has documented that Western societies value social representations of the individual that stress "individualism"; that is, an individual's autonomy, freedom, and separateness with respect to other people (e.g., Lee & Ottati, 1993; Markus & Kitayama, 1991; Sampson, 1993). However, people with power and status have been found to personify more closely this culturally valued orientation (Guillemain, 1972; see also Apfelbaum, 1979; Deschamps, 1982). Their self-representations match to a larger extent the culturally shared representation of an autonomous individual than do the self-representations of people with less power and status. They also come to define themselves mainly as "unique individuals," whose group membership makes only a minor contribution to their self-concept (i.e., the collection group). Less powerful and lower status individuals match the cultural norm less closely, and consequently they come to define themselves in terms of attributes which are associated with their group label as a whole (i.e., the aggregate group) (Lorenzi-Cioldi, 1998).

Research on sex-role stereotypes has demonstrated marked differences between men's and women's social representations of group membership, with respect to both content and structure. Studies conducted during the 1960s showed that descriptions of "men in

general” matched closely those of “adult healthy persons” (sex unspecified), whereas descriptions of women comprised more group-specific characteristics (i.e., more relational and expressive characteristics; cf. Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Hamilton, 1991; Lorenzi-Cioldi, 1988). Correlational research further reveals that such differences are not specific to gender. Questionnaire data gathered by Jackman and Selters (1980), for instance, showed a common tendency for women, African Americans, and low-SES group members, to perceive the social structure in categorical terms, and a tendency for the corresponding outgroup members to perceive it in more personalistic terms. Lorenzi-Cioldi and Joye (1988) used unobtrusive measures (sorting a large array of occupational labels) to demonstrate an analogous tendency among people with low socio-economic status or who came from impoverished cultural backgrounds. These people showed a pronounced tendency to sort the labels according to exclusive (i.e., bipolar) contrasts that uncovered stark status oppositions (e.g., blue vs. white collars, low-paid female vs. well-paid male occupations). Research on spontaneous self-perception (e.g., using the *Who-am-I?* test) has shown that less privileged group members are more likely than corresponding outgroup members to describe themselves in holistic and depersonalizing terms, especially ones that invoke relevant group labels (e.g., McGuire, 1984). This trend has been observed for a variety of asymmetrical group memberships, based on education (Deschamps, Lorenzi-Cioldi, & Meyer, 1982), ethnicity (Lorenzi-Cioldi & Meyer, 1984), and gender (Lorenzi-Cioldi, 1994).

This literature suggests that a shared social representation of the autonomous person is differently activated among different groups of people. By taking into account properties of social structure, one is able to predict that members of subordinate groups will attenuate their uniqueness (a tendency that emphasizes their collective identity), whereas members of dominant groups will accentuate their personal distinctiveness (a tendency that emphasizes their personal identity). We can now extend Markus and Kitayama's claim that “The notion of the autonomous individual in continuous tension with the external collective is ‘natural’ only from a particular cultural perspective” (1994, p. 570), to suggest that the poles of this tension, that is the individual and the collective, are likely to be represented in Western cultures by groups differing in social status. Only dominant group members are perceived as a gathering of individuals with more or less diverse characteristics (Lorenzi-Cioldi & Doise, 1990).

A series of studies was conducted to illustrate this idea (Lorenzi-Cioldi & Dafflon, 1998, in preparation). Specifically, these studies aimed at demonstrating that people, whatever their group membership, endorse to some extent representational content relating both to individual autonomy and uniqueness and to individual interdependence (i.e., individualistic vs. collectivistic representations for dominants and subordinates, respectively). To operationalize status differentials we used gender categories. The assumption that men have higher status and greater power than women is central to many social psychological analyses of gender stereotypes and behavioral differences between the sexes (e.g., Eagly, 1987; Ridgeway & Diekema, 1992; see Ridgeway, this volume, chapter 15). Although people in Western societies value individualism and independence, women are concurrently portrayed as having more relational, communal, and connected self and ingroup representations than men (Gilligan, 1982; Harding, 1986; Markus & Oyserman, 1989). Thus, men and women differ as groups regarding the proximity of their ingroup

representations to the shared cultural representation: men match it more closely than women (Eagly & Mladinic, 1989; Kashima, Yamagushi, Kim, Choi, Gelfand, & Yuki, 1995). We therefore predicted that autonomy and independence would be more strongly endorsed by people to describe Western than non-Western cultures, and to describe men, and “persons in general,” than women. Descriptions of women would embody average levels of both the shared (individual) and the ingroup (collective) descriptors.

To measure endorsement of the shared social representation of the autonomous person, participants rated their own culture (Occidentals in general) and the corresponding outgroup culture (Orientals in general). A symmetrical pattern of perceptions was hypothesized, with Occidentals being perceived to have higher levels of independence than interdependence, and Orientals higher levels of interdependence than independence. Gender was then used to distinguish between ingroup and outgroup perceptions within Western culture. Based on the assumption of gender status differentials, the shared dominant representation of the autonomous individual and the respective ingroup representations would coincide for judgments about male targets, and would conflict for judgments about female targets. Participants were thus expected to make stronger use of contents related to independence to characterize people in general and male targets, than female targets. For the latter, average levels of both independence and interdependence were expected. Accordingly, judgments of Occidental culture itself were expected to match those of people in general as well as male targets, while judgments of Oriental culture were not expected to match either those of people in general or those of female targets. Indeed, different cultures are likely to be judged by different standards (a social representation of individual autonomy for Occidentals, and a social representation of individual connectedness for Orientals), whereas men and women within Western culture should be judged in terms of both the shared cultural and the respective ingroup social representations.

Male and female Swiss participants were asked to judge the social desirability of various styles of behavior, by applying them to people in general, to men and women, to Occidentals and Orientals, and to the self (judgments about gender and cultural groups were collected in between-participants designs). Two styles of behavior with contrasting evaluative tones represented each social representation – the *individual* representation was operationalized by “independent” (positive tone) and “individualistic” (negative tone); the *collective* by “collectivistic” (positive) and “follower” (negative). Of particular interest here are the results concerning the ascription of each of the two representations (individual and collective, regardless of valence) to the sex-unspecified target, the gendered targets, and the cultural targets.

As predicted, “people in general” were described more in line with the individual than the collective representation, judgments of “men in general” closely paralleled those of “people in general,” and self-descriptions showed that male and female participants perceived themselves similarly to their gender ingroup. Only men firmly described themselves in terms of the individual representation – women attributed to themselves intermediate levels of both the individual and the collective representations. As predicted, “Occidentals in general” were resolutely described by means of the individual norm, and “Orientals in general” were resolutely described by means of the collective representation.

Generally, the results point to a striking similarity between social representations of male targets, Occidental targets, and sex-unspecified persons (as well as men's self), and to a lack of similarity between perceptions of men and women. Social representations of female targets (as well as women's self) matched neither those of Occidentals and men, nor those of Orientals. These results lend provisional support to the conjecture that in Western cultures, where the dominant social representation refers to a self-contained person, only those who are likely to have more power and status, that is, men, are fully identified with this content. This shared social representation was attributed to a lesser extent to female targets, who were also equally well characterized in terms of the ingroup collective representation.

So far we have illustrated the process by which men and women come to be differentiated from one another, as a result of differential proximity to a shared social and cultural representation that emphasizes and values individual independence and autonomy. We now consider how more individualistic versus group-oriented self-representations are enacted by men and women.

Social Representations in Intergroup Contexts

As a consequence of the greater salience of group-defining features for subordinate relative to dominant group members, it is likely that self-representations of subordinate group members are more deeply embedded in ingroup–outgroup comparison than self-representations of dominant group members. Dominant group members are more likely to focus on interpersonal comparisons.

Gendered self-representations

Bem's (1981, 1993) gender-schema theory provides a basis for testing this idea. According to Bem, gender-schematic individuals display a readiness to organize information about themselves and other people in terms of a dichotomous male–female (ingroup–outgroup) categorization, in which masculine and feminine attributes (i.e., culturally shared social representations of masculinity and femininity) represent opposing ends of a single continuum. Gender-schema theory predicts individual differences in the use of gender to organize incoming information. In contrast, social representations theory predicts group differences in the use of gender schemas. Specifically, by virtue of their differential placement in the social structure (either “objective” or symbolic), women should display more gender-schematic perceptions than men.

This hypothesis was tested in an experiment using unobtrusive procedures to measure men's and women's self-descriptions on a series of masculine, feminine, and neutral attributes (Lorenzi-Cioldi, 1991). It was possible to compare the average latency of responses to schema-consistent information (i.e., acceptance of ingroup attributes and rejection of outgroup attributes) to the average latency of responses to schema-inconsistent information (acceptance of outgroup attributes and rejection of ingroup attributes). Gender-

schema theory would predict that people make use of a gender-schema insofar as they process consistent information faster than inconsistent information. Consistent with social representation theory, the results revealed that it was women who behaved in a more gender schematic manner – they processed consistent information faster than inconsistent information. Men showed no differential processing of consistent versus inconsistent information.

Support for the differential salience of gender categorization also comes from other experiments, using a variety of procedures. For instance, Hurtig and Pichevin (1990; Pichevin & Hurtig, 1996) demonstrated the effectiveness of various moderators (numerical ratio of the sexes, dimensions of intergroup comparisons, and primes) to alter the perceptual salience of male but not female sex-membership. The latter remained highly accessible and thus readily available to all participants irrespective of their sex and of the context's characteristics.

Social representations and health

Research in health psychology provides other illustrations of the impact of an intergroup context on the construction of social representations. This research often rests on a pessimistic appraisal of people's current behavioral practices (Salovey, Rothman, & Rodin, 1998; Taylor, 1990). Medical statistics show that people often adopt behavioral practices that are detrimental to their health (drug abuse and cigarette smoking, inappropriate eating habits, etc.). Various cognitive models have been elaborated in order to promote beneficial health habits (e.g., Rothman & Salovey, 1997). However, the standard against which healthy versus unhealthy behavior is assessed, an implicit social representation of an ideal pattern of healthy behaviors, is rarely questioned. Surveys show that most of the attitudes and behaviors that promote healthiness are positively correlated with social status – lower status people tend to engage in an array of unhealthy behaviors that they often value because they are behaviors that promote collective socializing practices and activities within their group (e.g., Bourdieu, 1979). Yet, health-promotion programs are most often based on a de-contextualized representation of the risk factors involved in acquiring diseases (see McGuire, 1991). That is, they are based on individualistic principles that prescribe attitudes of self-responsibility, self-efficacy, and self-control – attitudes that have been shown to be unevenly distributed, or differently manifested, by members of different status groups (Gillioz, 1984).

Health-promotion programs are normative. They emanate from groups of medical experts and they fit the social representations of a specific group in the social structure; yet they are intended to be prescriptive for all members of society. This social representation is, once again, that of the autonomous and self-contained individual. Based on questionnaire data, and on factor analyses of opinions and behaviors, Gillioz (1984) outlined a multidimensional typology of health-related attitudes and behaviors. A gender logic and a social status logic prevailed in explaining different types of behavioral clusters, and the corresponding groups of people who most adhered to, or enacted, each type of behavior. The people most open to health recommendations issuing from medical experts were women, and medium to high status individuals, regardless of gender. It is

noteworthy, given that health protection is linked to an individualistic social representation in terms of autonomy and self-containment, that it is women who take more action and take more care of themselves than do men. Possibly, this is because, in emotional terms, notions of femininity and healthy behavior coincide, whereas images of masculinity and healthy behavior do not.

Gillioz's (1984) analysis, based on the way a prevention program fits the expectations and actual behavior of a large sample of people in a city, is conceptually grounded in an account of the degree to which a dominant social representation (framed by medical discourse) matches social representations held by different groups of people in society. What this analysis shows is that "good" and "bad" health-related behaviors are homologous, to some extent, to "good" and "bad" social positioning. It then shows that health-promotion programs are usually grounded in a social representation of the individual and of ideal social relations that much better fits with social representations of dominant rather than subordinate group members. This analysis raises serious practical questions about the efficacy of many current health-promotion programs. The issue of course becomes even more provocative if we take a more global perspective and focus on issues involving deep cultural differences in social representations; for example, aboriginal health in Australia, birth control in India, and AIDS control in sub-Saharan Africa.

Conclusion: From Mental Representations to Social Representations

Social cognition perspectives on individuals' mental representations help clarify the way individuals think and act in unspecified circumstances. These thoughts and actions are formalized in abstract models of cognitive functioning, for instance gender-schemas. Social representation theory further explains why and when such general cognitive principles are activated and applied in specific social contexts. In this respect, social cognition and social representation approaches complement one another.

Because of their lack of emphasis on supra-individual, cultural and social dynamics, purely cognitive models tend to reify individuals' cognitive functioning. This reification has helped to develop a "good" model – an efficient and heuristic model – but has tended to detract attention from the study of the conditions that facilitate, hinder, or moderate the implementation of a plurality of cognitive principles. People are viewed as relatively mechanical information-processing modules that operate under specifiable, formal, and widely shared (at least in a given culture) cognitive principles. This perspective provides an intellectual environment in which debates often revolve around the formal properties of such cognitive principles – the dispute between Bem (1982), who propounds the notion of a gender-schema, and Markus and her colleagues (Markus, Crane, Bernstein, & Siladi, 1982) who propound the notion of a self-schema, is an illustration of this (see Lorenzi-Cioldi, 1994, for commentaries on this dispute).

Shweder and Sullivan (1990) capture this situation beautifully in the following commentary:

The basic idea of a central processing mechanism is that deep within all human beings is an inherent processing device, which enables us to think (classify, remember, infer, imagine), experience (feel, need, desire), act (strive, choose, evaluate), and learn. Not only is the central processing mechanism presumed to be an abstract, fixed, and universal property of human mental life; it is also presumed that this abstract, fixed, and universal form transcends and is sealed off from all the concrete, variable, and particular stuff, substance, or content upon which it operates [. . .]. One quick and dirty (and striking) indicator of the influence of [the central processing mechanism heuristics] on personality research is the strong inclination among social-psychological researchers to move very quickly – indeed, to rush – from the discovery of some local, context-specific, meaning-saturated regularity (e.g., an audience facilitation effect or a dissonance reduction effect) to the representation of it in the literature as a fundamental law or basic process. We suspect that this “presumption of basic process” is so commonplace because of the hegemony of the central processing mechanism *as an idea* [. . .]. It then takes about a decade for the latest “fundamental” or “basic” process to be unmasked as a “mere” local regularity. (Shweder & Sullivan, 1990, pp. 407–408)

Moving beyond formal properties of individuals’ cognitive functioning, social representations theory draws attention to a variety of moderating factors in the way cognitions are enacted. In the examples presented in this chapter, social representations theory might explain why some information becomes a rumor, why some people – not people in general – endorse individualistic and/or collectivistic self-representations, why health-prevention programs are not always successful, and why some people display a gender-schema, while others do not. In the latter case, for instance, the theory demonstrates that gender-schematic processing of the information arises not solely from the match between the gender stereotypes and the male and female categories. Other factors, such as group positioning in the social structure, intervene to shape the individuals’ self-representations.

As Kihlstrom and Cantor (1984) cogently pointed out:

We have treated the self as an object of knowledge – as a mental representation of a thing that exists in the physical and social world [. . .]. We have nothing to say about the self as knower, except, obviously, to identify it with the cognitive system that encodes, retrieves, and transforms information. But the matter of the self-as-knower is not simply a matter of information processing. [. . .] We identify our ideas, our precepts, our memories, and our actions as ours. This problem of consciousness and metacognition remains the great mystery. (Kihlstrom & Cantor, 1984, p. 40)

We believe that the mission of social representations theory is to fill this gap between our knowledge of the cognitive and the metacognitive aspects of social behavior. The concept of social representation is increasingly widely accepted in fields that study health-promotion programs, advertising, cultural differences, or social movements. Researchers are beginning to pay more, and more serious, attention to the content of knowledge – specifically, to knowledge in particular settings, and to the ways in which this knowledge is shaped during its transmission. By shifting scientific focus away from formal properties of psychological processes, toward more dynamic and concrete social issues, social representations theory takes the social psychological research process in a new direction. We may still be waiting for a unified theory of social representations that could be applied

to all fields, but the relevance of social representations for future research is now quite clear.

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CHAPTER FOURTEEN

Social Comparison Motives in Ongoing Groups

John Darley

The concern in this chapter is with the workings of social comparison motives and processes in ongoing groups. What historically have been the concerns of “social comparison theory?” What we might call the “standard” social comparison theory about individuals (Festinger, 1954; Goethals & Darley, 1977; Suls & Miller, 1977; for recent developments see Suls & Wheeler, in press) has addressed how a person evaluates his/her own opinions and abilities by comparison with others who are voicing opinions or performing similar ability-linked tasks around him/her. This needs more explanation. In its original statement, by Leon Festinger (1954), social comparison theory addressed how an individual determined the correctness of the opinions that he/she tentatively held, or whether a certain ability was high or low. This determination was made by comparing one’s own abilities and opinions with what could be observed from the ability and opinion-linked performances of others. Further postulates of the theory addressed how these inferences would be affected by the similarity or dissimilarity of the comparison others to the person doing the comparing. Social comparison theory, then, concerned itself with two problems: how persons use information from others to learn about the physical or social world around them, and also to learn important things about their own abilities. The original formulation of the theory drew on Lewinian concepts. Since that formulation, the theory has been recast in attributional terms (Goethals & Darley, 1977) and its implications for various aspects of self-presentation (Darley & Goethals, 1980) have been recognized.

The present chapter addresses a somewhat different set of questions than does the standard social comparison theory, and it is useful to begin by spelling out those differences. The present chapter attempts to articulate a social comparison theory that addresses social comparison processes in ongoing groups. We will be concerned with extending social comparison notions to groups that exist within social and organizational domains, and

have been formed to carry out certain tasks or to fill certain needs. On examination, classical social comparison theory has not paid a great deal of attention to the origins of the set of individuals that forms the set of comparison others for an individual. Sometimes the standard theory has conceptualized those others to be individuals recruited in the imagination of the individual rather than the individuals actually present. At other times the theory has conceptualized the comparison others as a present collection of individuals, such as fellow students in an elementary school classroom, or the other sprinters gathered for a track meet. Thus, there is a sense in which classic social comparison theory has not been about social comparison with groups of persons. The comparison others are not necessarily in the same group as the comparing individual in any psychologically meaningful sense.

A second set of social comparison theories focuses on comparisons between groups. Social identity theory (Abrams, 1992; Hogg & Abrams, 1988; Tajfel & Turner, 1986; see Hogg, this volume, chapter 3, for a perspective on social identity theory that takes into account the recent inclusion of self-categorization considerations) asserts that the individual finds self-esteem in belonging to a favorably regarded ingroup, an assertion documented by research that demonstrates that individuals can and do “bask in reflected glory” by brandishing their group membership when that group has, for example, won a sporting event. Hogg (in press) examines the historical and current role of social comparison processes in the social identity perspective. Relative deprivation theory (Runciman, 1966; Walker & Pettigrew, 1984) would make a similar assertion, although its focus is characteristically on the loss of status or esteem that an individual feels when that individual is a member of a poorly regarded group. A group that is disrespected by other groups is social comparison-deprived, for instance, and develops some explanation of that relative deprivation that leads it to acquiesce in or rebel against its deprivation.

Our concern in this chapter is rather different. We focus on the individual within a group that has been formed for other purposes than social comparison, and the social comparison processes that take place for that individual with other members of that group. (This is not to deny that a person extracts self-esteem from the standing of his or her group vis-à-vis other groups. Since this is so, the person will work hard to contribute to the product of the group so that this group will excel. The increase in self-esteem that is gained by the rise in prestige of the ingroup is a force that motivates each individual's contributions to the group efforts.) In our theory the group in which the individual belongs “comes first” as it were and it is with others in that group that the individual compares. Paradigmatically, the group is a sports team, a work group in a factory, a group of computer programmers working together on creating a computer application, or a set of sorority sisters living together in a sorority house on a college campus. The comparisons that take place, obviously, can be on abilities and skills that are central to the group's existence, or ones that are largely irrelevant to the group's purposes. Given the fact that the group is often a task-driven group, it will frequently be the case that the comparisons are on the tasks that are central to the group's purposes.

We begin by assuming that a person is a member of a group and that membership in that group is “psychologically significant” to the person. If a group is “psychologically significant” to a group member, then the group will exert influence on the behaviors, thoughts, and emotions of that group member. This, of course, is the standard definition

of “social influence” and we need to restrict the domain further to limit the scope of this chapter. The limit is easily arrived at. Social comparison theorists have suggested three basic motives that the individual brings to the group. The first is one of accurate self-perceptions of one’s skills and talents (Festinger, 1954). In a world in which one is often offered the possibility to attempt tasks, it is useful to know the level of one’s various abilities in order to determine the probabilities of success at these tasks. Second, since William James (1890) we have recognized that people not only want to know how well they can perform a task, but also that they can “perform it well” (Goethals & Darley, 1977). For many, perhaps most of the tasks that we are called on to perform, to do them well is to increase our self-esteem, and to do them poorly is to lower it. Third, and closely connected to the second motive, a person wants to do well at a task in order that the others in the group will increase their esteem for her, or at least avoid failure so that others will not decrease their esteem for her.

It is the last two motives that we focus on in this chapter. Since Mead (1934) and Cooley (1902), psychologists have recognized that the two are inextricably linked. Since we all learn through socialization to take the role of the other, and to see ourselves from the perspective of a generalized other, we apply to ourselves the standards of normal members of our culture. Therefore, a poor performance that causes others to regard me in negative ways lowers my self-esteem. Self-esteem is to some considerable extent driven by the regard of others.

This can easily be applied to performances on tasks that are necessary for group functioning. The more the group values the task, the more doing well on this task matters; the more one’s esteem in the group depends on succeeding at that task. It is how the group manages these issues of esteem they grant to others within the group, and the effects that has on the individual’s self-esteem, that we will find are central to this chapter’s considerations.

This is generally consistent with the thrust of classic social comparison theory. It has historically concentrated on the influence of others on the self-relevant thoughts and feelings of a group member, with particular attention focused on the evaluations that persons within groups make of their own achievements, abilities, moral worth, and social competencies. The suggestion, confirmed in a number of studies, is that these self-evaluations are heavily comparative in nature. My evaluation of my own performance depends on its standing vis-à-vis the performances of others in my group. It is these self-evaluations and my evaluations of what others “think of me” that we will be concerned with in this chapter.

In the real world, groups are formed for a number of purposes. Thus “the group” can be created for a number of functions: a work group in an organizational setting, a baseball team, an affinity group such as a sorority or a set of model train hobbyists, a combat platoon, or a committee of faculty.

These groups exist in the world in the standard ways that groups exist, and generally the new member can be said to have “joined” the group at a fairly well-defined moment in time. But psychological research has taught us that the propensity of an individual to regard himself as a member of a psychologically meaningful group extends beyond existing groups joined in a standard manner. Recall from research using the minimal group paradigm (Diehl, 1990) that people are quick to identify with “groups” by discovering

similarities on quite minor and fleeting shared characteristics, so almost every characteristic that can be made salient to an individual can create an ingroup that shares that characteristic, and an outgroup that does not. In other words, “group membership” created on the basis of quite minor characteristics can be psychologically significant to the individual. Relatedly, social identity theory, particularly in its self-categorization mode, makes clear that a person’s identification with a particular classification that forms a group depends on the surrounding social context (Hogg & Abrams, 1990). Three or four women executives at a convention, surrounded by a sea of men, will feel a common shared identity that may drive them to get in contact with each other, and form an interacting group.

What we can do, in the present chapter, is analyze comparison processes in interacting groups. These other “proto-groups” will figure in our analyses if they become interacting groups, with a set of purposes for interacting, which implies a set of skills and efforts on which the members can be evaluated.

We can now summarize the argument this chapter will make. Groups come together for a number of reasons. The functions that the group takes on, or are assigned, determine the tasks the groups must perform, and thus the abilities that are central to its mission. The central point of this chapter is that the group’s purposes will determine the dimensions along which members compare their performances to one another, and social comparison of these group-relevant performances will determine the esteem in which the group holds the individual, and thus the esteem the individuals have for themselves. As a group’s purposes emerge, develop, or are changed by changing demands on its functioning, social comparison processes can lead to an individual’s standing rising and falling in the group. Next we turn to a taxonomy of groups, in terms of the functions the groups are expected to fulfill.

A Taxonomy of Groups

Any number of social scientists have made interesting conceptual distinctions between kinds of groups. Here we can only address the distinctions that are most germane to the social comparison considerations that we address in this chapter. Before we examine these distinctions, we will illustrate the sorts of groups that we intend to consider. Some groups have relatively well-defined production tasks. An army platoon is to capture a hill, a work group is to assemble a certain number of parts into an array of functioning machines, and a faculty committee is to design an undergraduate curriculum. For other groups, the commodity to be produced is the training of the group members. Boy scout patrols and high school study groups are examples of this sort of group. For still other groups, it is not at all easy to specify what they are to produce, and it may even be the case that thinking of them as groups assembled for the purposes of production is wrong. A group of people who get together to discuss a book gather together partially to inform each other, but partly to have a good time together. Hobby groups share knowledge with each other, but mainly share the social validation of the legitimacy of the excitement of the hobby.

A rough division of groups is possible, and will be useful for this chapter. Some groups are task groups, in that their major purpose is to perform certain tasks. Work groups in organizations are paradigmatic examples of this, and we would also include the combat platoon, and the faculty committee. Other groups might be called affinity groups; for them the major purpose of getting together in the group is to affiliate with like-minded others. A group of hobbyists would fit this definition, as would a sorority.

Typologies oversimplify. Obviously affinity groups have tasks to do, and the members of task groups often feel strong affinities for each other. The model railroad hobbyists plan eagerly for their pre-Christmas model train show, and the sorority sisters run their sorority house, budget their expenses, and generally carry out the tasks necessary for their continuing existence. The affinity bonding in military service is often the strongest bond those people form in life, and work groups often draw very close to each other. (See Prentice, Miller, & Lightdale, 1994, for a discussion of how groups that begin as having only bonds to each other develop into valuing the group's identity, over and above those bonds.)

McGrath and his colleagues (Arrow, McGrath, & Berdahl, in press) have made a useful distinction that illuminates but does not exactly map the distinction that we are making. They distinguish between groups that interact and who have some relationships of interdependence, and categories of people who come to mind because they share one or more attributes. It is this second term of the distinction, a category of people that share attributes, that we think is often imaginatively called into mind when standard social comparison processes are at issue. I run the 100 m dash and call to mind the category of Olympic-class dash runners (or aging, out-of-condition professors) and Olympic dash records, and compare my performance with those records. But it is important to say that the affinity groups that we have described are not just people who share an interest and therefore are just a categorical and imagined collection of individuals. Our affinity groups meet face to face, and the time they spend together they would describe as some of the most important time they have. Individuals in these affinity groups may begin by focusing on the bonds they feel to other group members, beginning (Prentice, Miller, & Lightdale, 1994) as a "common-bond" group. However, over time they are likely to form an identification with the group over and above their bonds to individual other group members. Further, since they need to carry out the various chores required in order that the group continue to exist, and even to expand and take on more activities for its members, there is a need for multiple skills and talents, and group members who have those skills are thus useful to the group.

What Characteristics and Abilities does the Group Value?

As we suggested above, task groups are likely to value the characteristics and talents of individuals that contribute to the success of the central group tasks. Stereotypically, when we think of task groups, we tend to imagine groups such as football teams or combat platoons in which it seems to the outsider that one essential skill is required – in the case of the team, the ability to smash the opponent; in the case of the platoon the ability to kill

the enemy. Actually, the notion that a person is valued by the group in proportion to her contribution to the group's central tasks requires some amendment. Expectation states theory (Ridgeway, this volume, chapter 15) points out that status within a group, which is generally equivalent to our notion of the group's valuation of the individual, is produced in not one but two ways. First, how good you are at the group-defining tasks, but second, by your more diffuse and general status characteristics. Being the best trumpet player in the football marching band gains one status because of its central utility to the band, but having a high general status in the larger world of status via socio-demographic considerations also makes a difference in the way that the group regards you and treats you. For instance, a brain surgeon and a janitor may be equally poor musicians, but the band is going to grant the brain surgeon higher status. This strikes me as true but it might be useful to distinguish exactly what sort of standing these two considerations gives one, rather than lumping them together as "status." The poorly playing janitor has few other useful functions to perform for the band, and thus could be expected to see this and quietly exit. The poorly playing brain surgeon can, for instance, help the band gain audiences, and perhaps stage fund raisers among his fellow brain surgeons. To the extent that he whole-heartedly throws himself into these supporting role considerations, and to the extent that he recognizes his poor musical skills and plays very softly, the band may have a complex but positive regard for him that will allow him to remain.

As this hints, the notion that a person is valued by the group in proportion to her contribution to the group's central tasks is usefully amended by a second realization. In fact, in most task and affinity groups, not one but a number of skills, abilities, and expenditures of efforts are required for success. Even in those relatively "one-central-skill-homogeneous" groups, having different people with differing talent profiles is useful. It is useful to realize that, for any moderately complex task, a number of different skills and talents will be necessary for the group's success. If the group task is putting out a newspaper, for instance, then good writers and photographers are needed, but also good manuscript editors and layout artists. Those who knew about printing presses used to be required, now skills with computer pagemaking programs are necessary.

For present purposes, I want to focus on the self-esteem that an individual feels because of the weight and value of his contributions to the group as compared to the contributions of others in the group, and on the signals he receives from other group members about the value of these contributions. (This is thus separate from Crocker & Luhtanen's (1990) concept of collective self-esteem that springs from the esteem in which the group is held. However, desire for collective self-esteem will motivate group members to work for the success and glory of their groups.) At first glance, the fact that groups generally require a multiplicity of talents seems to create a solution to the problem of each member gaining self-esteem in the group. Each member simply values most heavily those talents he or she is in a position to contribute. There is probably some of this (Ross & Sicoly, 1979) but the process has a limit: each individual who is a group member is psychologically likely to value those characteristics and talents that seem most central to the group's essential purposes. Concretely, the newspaper delivery boy is not going to get the status that the newspaper reporters get. This is so for reasons pointed out to us by an expanded social identity theory (Hogg, in press; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987).

The addition of self-categorization theory to social identity theorizing stresses the fact that an existing and salient group identity causes the group member to depersonalize his or her normal self-identity, and to “shift toward the perception of self as an interchangeable exemplar of some social category and away from the perception of self as a unique person defined by individual differences from others” (Turner et al., 1987, pp. 50–51). Deaux (1996) has written extensively on the relationships between a person’s own view of his/her identity and the transformations that this view goes through when the person is a member of a group (Deaux, Read, Mizhari, & Cutting, 1999; Deaux, Read, Mizhari, & Ethier, 1995; Reid & Deaux, 1996).

The general point we want to extract is that there is a trend here. Social identity theory will cause all group members to most value the display of those traits or skills that are central to the group’s tasks, but for reasons we point out, the group member who is not skilled at those central tasks may still contribute to the group’s purposes by taking on non-central but essential tasks. What we will discover is that it is in an important sense the choice of the group whether the person who fulfils those tasks is granted esteem from the group.

How does the Group Convey Self-Esteem to its Members?

Equity theory (Adams, 1965) points out that the group frequently has tangible benefits to convey to its members, often in the form of the distribution of valued material commodities earned by its joint activities. Since groups often have resources to share out among their members, the sharing strategies will be interpreted as giving the group members clues about their differential worth and the comparative value of their skills, performances, and efforts. The standard assumption in a group, equity theory suggests, is that one’s outcomes are proportional to one’s contributions to fulfilling the group’s tasks. Any individual can use this assumption to reason backward from the share of the benefits offered her to the group’s valuation of her contributions. Relative deprivation theory has a similar postulate about entitlements to resources generated by contributions to group efforts that allows for a similar decoding of one’s value to the group.

The point here, drawn both from equity and relative deprivation theory, is that for a group that as a group earns resources, the decisions of the group or those authorities granted power to make those decisions about the distribution of those resources among the group members is what reveals the collective agreement on the “real” value of each of the group members to the group.

As we have said, sometimes the resources earned are straightforwardly monetary or involve some other commodity that is limited and so creates a zero-sum allocation problem. When that is so, the “bottom line” is the bottom line, and it is the distribution of the fixed resource that reveals member standing. Other times the resources earned by the group are less zero sum in character; perhaps they involve the prestige of a win or a job well done, or generalized good regard from other groups. These other kinds of “earn-

ings” have more expandable possibilities. In the dialogues that occur after a baseball team wins its game, the members create stories about how one fielder made a catch that prevented a large number of runs being scored by the other team, about how a pitcher performed well in relief, and even about how a first-base coach alertly held up a runner who otherwise would have been thrown out at second. These stories allocate credit for the group success to various members; importantly, the stories are told by other than the subject of the story. In a well-working group, the story about how Dave made a great contribution is told by anyone other than Dave. The individuals who made the most contributions to the success of the group have the gracious possibility of telling stories that cede some of their glory for having produced the victory to the efforts of others, making them also entitled recipients of the now shared glory, which is expanded by being shared.

What we see here is something that we all understand intuitively, and its existence is one of the most interesting consequences of considering social comparison processes in groups when those groups exist for reasons other than social comparison. These groups generally need to continue to exist. They will sometimes facilitate their continuing existence by blunting or moderating the workings of social comparison processes. They do so because they cannot tolerate the negative consequences that follow from the free workings of social comparison processes, with the attendant possibilities of lowering the self-esteem of certain of the group’s members. They therefore “downkey” interpretations that limit credit for success to those whom stereotypic analysis would code as most responsible for a task, and develop narratives that distribute the credits more evenly among the group members.

This “downkeying” is easiest when the resources being distributed are symbolic and unlimited rather than financial and limited. As we said, when a work setting group receives a bonus for over-achieving their production quota, its choices about the allocation of that bonus among the workers tells each member how that member “really” is valued by the group. But even then, it is possible for the system to use allocation mechanisms for limited resources that do not single out certain members as central contributors and deny group esteem to the others. Wise groups, therefore, know how to choose an allocation mechanism that does not attempt to put a precise valuation onto each member’s contribution. They divide it “equally” or according to individual need. Best of all, they allocate it to some joint group purpose like a banquet, thus celebrating the fact that it was the group effort that earned the bonus.

But we shouldn’t spend too much time in this comparison-benign world without remembering that sometimes groups do distribute their rewards according to the differential value they place on different members’ contributions to the group efforts, and they do not attempt to develop narratives that will bolster the self-esteem of the less-valued group members. In fact, they will sometimes sharpen the contrasts between the differential value of the different group members by criticizing or otherwise denigrating the lower status individuals.

When does a group take one or the other of these alternatives? The answer to this is provided by a consideration of the ecological conditions that surround the group, particularly the possibilities that the group has to replace its members.

Groups Exist in Ecological Settings

Groups exist in ecological settings, and some aspects of these contexts are important to social comparison processes in groups. Along one dimension, a group may have an open character such that it can theoretically recruit new members from large pools of available people, or it may be “closed” in that its membership is for all intents and purposes fixed, in the sense that no new members are feasible. A professional basketball team is an example of the former case, while a faculty basketball team from a department of five souls is the latter case. On a related dimension, a group may have the power to expel existing members (and recruit new ones) or it may exist in a social context in which every member is precious and cannot be replaced. As we will see, the social context surrounding the group will have quite important consequences for the group’s regard for various of its members, and thus for the self-esteem of each individual.

Predicting when group members will be motivated to be tactful or ruthless in their distribution of material rewards and prestige requires us to draw on another psychological theory that is rarely mentioned in the social comparison literature. The ecological setting of the group sharply affects the rules that are likely to be used for the distribution of the group-earned resource. The examples given above implicitly assumed a group that needed to retain the committed loyalties of its members. This occurs in groups in which there are few or no possible replacements for the existing members. This may emerge for any number of groups, but is particularly likely to emerge for groups that exist in what are called “understaffed” settings. Groups, that is, that need every member in order to fulfill their essential tasks. These are the predictions drawn from what is now called “staffing” theory, formerly called “manning” theory, which is a contribution of the ecological psychologists (Barker & Gump, 1964; Schoggen & Barker, 1974; Wicker, 1968). An “understaffed” or underpopulated setting is one in which there are metaphorically fewer hands than are needed to do all that is necessary. An example would be a high school with so few students that it couldn’t have a football team, cheerleaders, and a marching band, unless everybody who could remotely fill one of those roles did so (and the football team still didn’t have many substitutes, the cheerleaders were few, and the band was small).

Theory and research suggest (Willems, 1967) that in understaffed settings, individuals “have less sensitivity to and are less evaluative of individual differences in behavior,” “see themselves as having greater functional importance,” and have “more responsibility.” This turns out to work to the advantage of the group, as it seeks to retain the participation of those members who have less to contribute to the group enterprises, but whose retention is none the less necessary. We argue that for the group to survive, it must arrange for a reasonable amount of gratification of the social comparison motives for group members. How this is arranged involves the occasional muting of social comparative information, and the exercise of tact and “downkeying” of the inadequacy of occasional performances by weak performers on the part of those at the top of the performance ladder. We suggest that in understaffed settings, the group members recognize the utility – the necessity – of eliciting contributions from all group members, and also recognize that this almost dictates a reasonably egalitarian distribution of rewards and esteem. This

is not to say that there are not differences in an individual's regard for different group members; but it is to say that the regard that is expressed for even the lowest ranked members does not fall into a negative zone. Further, candid assessments of the inadequacies in the performances of the less-qualified group members are stifled rather than expressed, at least in the presence of these less-qualified group members.

Think next of overstuffed settings; ones in which the group would be able to recruit skill-qualified replacements for group members; or for affinity groups, highly prestigious fraternities and clubs that have far more applicants than they can or will admit. There a group member who does not perform tasks with adequate skill will not damage the group by his departure, in fact may improve the group performance if his replacement is more skilled. In the affinity group, a member who does not participate fully in the group, or who withholds voluntary energy, is one who is taking the place of a better group member. In these situations, the group members do not feel a mutual obligation for the egalitarian distribution of resources among members, or an easygoing willingness to share in the glory of the group successes. On the contrary, these groups are likely to be quite willing to signal low regard for marginal group members, on the theory that they can easily replace these members and the replacements will be more valuable to the group. In these groups, social comparison is a mechanism that can be used to create psychologically untenable positions for a group member, causing that member to exit the group. This, of course, reminds us of Marques' "black sheep" effect (Marques, Abrams, Páez, & Hogg, this volume, chapter 17; Marques & Páez, 1994; see Marques, Páez, & Abrams, 1998 for a discussion that examines a notion of intragroup differentiation similar to the one developed here). The black sheep in a group is one who is marginal on one or more of the group's prototypical attributes. Other group members conveying low regard for the black sheep's contributions to the group's efforts is an effective mechanism for the expulsion of the black sheep. The present point is that this will happen only when the group has the option of expelling the black sheep. Moreland and Levine's (Levine & Moreland, 1994; Moreland & Levine, 1982; Moreland, Levine, & Cini, 1993; Levine, Moreland, & Choi, this volume, chapter 4) model of group socialization is illuminating here. The group does a cost/benefit analysis of the value of the member in question to the group and withdraws commitment to that member if the calculations come out unfavorably for the retention of that individual. Relatedly, the group will not allow entry to potential new group members if the calculations are similarly low. The point developed here is that whether or not the calculations are favorable for the retention of an individual depends on what other individuals are potentially recruitable.

Returning to the question of how an understaffed group can create a climate in which, metaphorically, a black sheep can gently be painted at least gray if not white. Assume an individual who is performing poorly on the central group tasks, and is at least occasionally required to perform. Another research literature becomes relevant here, and it is the literature on excuses and self-handicapping (Jones, Rhodewalt, Berglas, & Skelton, 1981; Rhodewalt, Morf, Hazlett, & Fairfield, 1991; Snyder & Higgins, 1988; Snyder, Higgins, & Stucky, 1983). For a group seeking to retain its members, and to retain their willingness to contribute what efforts they can to the group tasks, those members need to be allowed to create "excusing conditions" for their less than stellar past performances. When those performances are of the sort thought to be linked to underlying abilities, the excuses

given highlight the non-ability determinants of past poor performances. A tragic event in one's personal life temporarily destroys motivation and the ability to concentrate, for instance.

Not only do the members need to be allowed to put forward these excuses, but also the group needs to honor and validate them. This may take quite a good deal of face-saving ingenuity on the part of the group members. But if this ingenuity is not mustered, the danger is that the poorly performing individual feels a contempt stemming from the other group members that is destructive to his self-esteem.

This, of course, is the mechanism that can lead to voluntary departures from groups that have the possibilities of recruiting replacement members. Depending on the choices made by the poorly performing member, this can be a more or less esteem-damaging process. If the exiting member is willing to exit early and signals that, then she may offer an excuse that attributes poor past performance to lack of motivation rather than ability. The member choosing that option will need to create a story to tell to herself and others that makes her exit as non-stigmatizing as possible. Given that she has encased the excuse in a narrative that announces her exit, the group will not be motivated to contradict the truth of the excuse. In affinity groups, similar stories can be told. It is not, for instance, that one does not value the fraternity's activities, it is just that "time demands" do not allow full participation. If this announcement is coupled with the member's resignation, the other group members will not find it necessary to point out to the exiting member that they all face and cope with similar time demands on their activities.

The interaction can get nastier. If the group member is continuing to perform poorly, or failing to keep work commitments, and if the group has the possibility of replacing that group member with a more productive new recruit, then the group may force that member to exit by explicitly contradicting the excuses the member offers for poor performance. This essentially forces the person to face the contempt in which his low abilities or failed commitments have led the group to regard him. By this manipulation of social comparison information, the failing member is generally led to exit the group.

Emergent Functions in Group Settings

There is an undeniable bleakness to the above account of social comparison's role that the group can mobilize to cause non-performing members to exit if their replacement is possible. But that bleakness can be at least ameliorated if one examines the full range of activities that groups need in order to function successfully. The fact is this: When individuals act within groups, more functions are necessary than when those individuals function as individuals. Putting this another way, any group requires certain functions to continue its existence as a group, with coordination and control functions being the most obvious examples. "Leadership" is another function thought of in this context. This creates a wider set of possibilities for group members to find ways to be useful to their group, and persons who take on these functions are valuable to the group. For instance, a group certainly will require communication between members for task coordination, and those who take on this communication and coordination function are valuable to

the group. In fact, in the famous Bavalas studies, people at the center of communication hubs often are chosen as leaders by their groups. Other functions are often necessary: record keeping and other forms of institutional memory are examples of this. Many other functions are necessary, depending on the composition and the task of the group. This creates a number of “behavioral niches” into which people can insert themselves to facilitate the group’s progress. Further, successful performance in many of these niches may rely more on a willingness to expend effort rather than on abilities. As Daubenmier, Smith, and Tyler (1997) have shown, the willingness to engage in what they call “extra-role” behaviors is linked to being viewed by others as a valuable group member. (An example of extra-role behavior might be the web-page designer who during the all-nighter gets coffee for the programmers while waiting for their markups of her designs.) As this indicates, a generalized alertness to what the group needs, and a willingness to “go beyond the call of duty” in providing what the group needs, is a valued stance for a group member. While it is probably true that those who are best regarded in a group are those who have the most to contribute to the central tasks of the group, these niches can create the possibility of an individual finding value in the eyes of the other group members by performing some essential but not central task for the success of the joint effort.

The Consequences of Giving or Denying Individuals Self-Esteem within Groups

Respectful treatment enhances self-esteem

We have seen how a group can use social comparison information to cause less valued members to exit from the group if replacement is possible. A closely related idea is that the desire for esteem from the group can motivate group members to expend effort on tasks that will benefit the group. This is so both because esteem matters and what goes along with esteem matters.

First, consider what goes along with the distribution of esteem within a group. If, as is often the case, the group has material rewards to distribute to members, then we can expect group members to expend effort for the group because the esteem in which the group holds different members is generally linked to the differential distribution of these material rewards. Social exchange theory (Thibaut & Kelley, 1959) suggests that people interact with each other to gain material resources. Extending this to the functioning of people within groups, the degree to which the person contributes to the group is a reflection first of the past rewards and resources the person has received for past contributions, and second, the person’s expectations about the contingencies between future contributions and future rewards.

This is the analysis that flows tautologically from one powerful and prevalent theory of human nature, the theory that holds that people are motivated primarily by material self-interest. But recent work (Tyler, 2000) suggests that our culture’s tendency to focus on self-interest and material rewards for individual efforts, may not be the true central motivator of the individual group member who contributes time, energy, effort, and abil-

ities to the group. What Tyler, Lind (Tyler & Lind, 1992), and their colleagues have shown, at its most general level, is the consequences that follow when a group gives a person “standing” within that group. An individual who feels that a group he is in gives him “standing” or “respect” is a person who is willing to sacrifice his own interests to the interests of the group, and to voluntarily pitch in to help the group fulfill its purposes. Importantly, there is a non-calculational component to this response. The person will often voluntarily comply with a decision a group makes, even when the decision goes directly counter to her self-interests. For instance (Tyler & Degoey, 1995), citizens who feel that they are granted standing by the relevant authorities, and that the relevant authorities make decisions in a fair way, voluntarily reduce their water consumption during droughts when asked to do so by the authorities, even though their consumption is not monitored. In other words, they voluntarily exercise restraint in a social dilemma situation. The group-value theorists (for a recent review, see Tyler & Blader, 2000) have collected an impressive set of results showing that an individual who perceives that a group he is in treats him in ways that signal that he is a respected member of that group feels an enhanced self-esteem and will be a loyal and hard-working member of that group.

What does it mean for a group to give a group member “standing?” What are the actions by means of which the actions of the group convey “standing” or “respect” to the individual? On our terms, granting a person “respect” involves treating that person in ways that convey that the group values his membership in the group. The group-value theorists raise an interesting question. What classes of actions can the group, or the authorities of the group, take to convey that self-esteem enhancing message? Essentially (Tyler, 1999), the task is to convey messages of “respect,” which tell the recipient how he or she is evaluated by others in that group. To tie the group-value model to the social comparison considerations discussed here, it is useful to mark these researchers’ (Smith, Tyler, Huo, Ortiz, & Lind, 1998) demonstration that treatment quality works through perceptions that the group respects the individual, which enhances self-esteem.

Respect, the group-value theorists suggest, is conveyed to an individual in three ways: first by indicators of status recognition, second by signals that the group and its authorities have a benevolent stance toward the individual, and third by signals that the group will make decisions about the person that begin with a neutral stance, and are fair-minded, rather than playing favorites within the group. Evidence (Tyler, Degoey, & Smith, 1996) shows that an individual’s perception that a group treats her favorably on these three dimensions enhances self-esteem.

Disrespectful treatment

Respectful treatment increases self-esteem and brings the group member to be a loyal contributor to the group’s needs. What are the consequences of a group or organization treating an individual in ways that signal disrespect? Some we have already dealt with; the individual will desire to exit the group. But suppose that exit is somehow blocked, either because the material resources the individual gains from group membership are too high to forego, or for some other reason. The psychological considerations we have developed

here suggest that is a highly volatile situation. Basically, to preserve some self-esteem the disrespectfully treated individual must cease to grant any validity to those signals of disrespect and to the individuals from which they come. The group-value theory helps us understand how this is done: the individual decides that the group is malevolent toward him, and gives unfairly favorable treatment to others. In social identity theory terms, the person psychologically exits the group, and no longer derives elements of his identity from group membership. His contributions to the group, if he makes any, are only due to compliance to power, enforced by surveillance.

It can get worse. If the group or organization is perceived as hostile toward one, then acts of hostility toward the group are retaliatory and appropriate. A recent book (Kramer & Tyler, 1996) contains a good many chapters by social and organizational psychologists showing the consequences that occur when individuals mistrust the groups or organizations in which they are situated, and they are about what the current perspective would lead us to expect. In a chapter entitled "The road to hell," Sitkin and Stickel (1996) demonstrate the demoralization of a research team when management inflicts what they perceive to be demeaning performance requirements on them. Kramer (1996) demonstrates the development of "paranoid cognition" in workers who are made to feel insecure about their status or standing within an organization. Bies and Tripp (1996) document acts of revenge taken by organizational members who were mistreated by their organizations. Two findings emerge. First, demeaned individuals felt it morally appropriate to retaliate against the offending institution, and second, they bided their time in order to retaliate when it would be maximally harmful to the organization.

It is hard to escape the conclusion that an individual who is disrespected by a group in which he retains membership, although he may initially strive to gain respect, will later cease to be a productive member of that group, and will eventually be a destructive member. Applying psychological theories to self-esteem gained by social comparison processes explains many phenomena of productive and loyal behavior on the part of group members. Applying the same theories to situations of self-esteem destruction by social comparison processes illuminates the origins of destructive behavior by group members.

Chapter Overview

This chapter has considered a specific, perhaps unusual, and narrow set of issues concerning social comparison. The orienting question concerned the operation of social comparison processes in groups that exist to fulfill certain tasks or to share certain interests. Social comparison here is taken to mean the reflected information that individuals receive about their own abilities and skills by engaging in comparison processing of the information provided by the performances of the other group members. The information is processed, as Festinger suggested, to reveal to individuals the level of their abilities. But a second motive, other than learning the level of one's abilities, is more important. Since "abilities" are qualities that the culture values possessing, and since the individual is generally a well-socialized member of the culture, the self-esteem of the individual is dependent on doing well at the ability tasks, and thus being seen by others and by oneself as

having high abilities. The tendency for one's own self-esteem to depend on one's performances on the ability-linked tasks that are central to the group's functioning is increased by social identity considerations. As a member of the group, the individual adopts the group's view of what abilities are important, and these abilities will be the ones that are important to the group's success.

This means that the self-esteem of an individual work group member is heavily dependent on the signals that the individual gets from the group about the adequacy of his or her performance. If the individual's performances are poor on the group's core tasks, the group has a choice to make about the signals it sends to the individual about the adequacy of those performances. Here we suggested that the signals depend on estimates of whether the potential exit of the marginally performing individual will benefit or harm the group in the long run. Staffing theory, growing out of the work of Barker and other ecological psychologists, was drawn on to determine the relative costs and benefits of the exit of the marginal individual. Essentially, if the marginal individual can be replaced with a much better-performing substitute, then the marginal individual's exit is desired; if replacement is impossible, or all potential replacements will be more marginal in their ability-linked performances, then the group must engage in the complex task of maintaining and even bolstering the self-esteem of the marginally performing individual.

There is a bleak side to this. For groups that have the possibility of replacing marginal members, this analysis suggests that the processes by which the marginal member is led to exit will involve considerable self-esteem damage to that individual. However, there is an alternate path available to the marginal individual that may retain his or her membership in the group, and his or her self-esteem. The individual who is less skilled on the tasks that are central to the group's identity has a second path to demonstrating some utility to the group. This involves finding or creating some activities that facilitate and support the group's performance on its core tasks, and diligently and assiduously contributing to the group's functioning in this way. The greater the ingenuity involved in the discovery of these secondary but useful roles, and the greater the effort and talent demonstrated in carrying out the role-related tasks, the more esteem the role player can earn from the more central group members.

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CHAPTER FIFTEEN

Social Status and Group Structure

Cecilia L. Ridgeway

It is striking how concerned people are about their status in the eyes of others. Consider teenagers who seek “respect” in the streets or professionals who are deeply concerned about the opinions of their peers. Relations of social esteem, deference, and influence shape behavior in powerful ways. They constitute a central component of the social structure of a group, which is often the structural skeleton around which other aspects of relations among the members are organized.

In thinking about status relations, it is useful to distinguish between a *status structure*, which is a rank ordered pattern of influence and deference among a set of actors, and the actors’ shared beliefs or social representations about *status value*. Anything that the cultural beliefs of a society or group associate with standing in status structures can take on status value and become a cultural sign of worthiness in that collectivity. Some beliefs that rank order the status value of certain things are particular to small groups, organizations, or communities within a society (e.g., clothing styles among teenagers, neighborhoods within a city). Such beliefs may differ from subgroup to subgroup.

The most powerfully influential status beliefs, however, are widely shared within whole societies. Many of these attach differential status value to the socially significant categories to which people belong, such as their occupation, ethnicity, gender, educational level, or social background and to the observable attributes that are presumed to mark membership in these categories. Because they are widely shared by people from diverse communities within the society, such beliefs provide a common cultural backdrop that actors draw on to organize interaction when people from different social categories come together on the job, in social contexts, or in other environments.

Several decades of research in social psychology and sociology have demonstrated that widely held status beliefs about actors’ distinguishing social characteristics play a powerful role in organizing the patterns of influence, respect, and deference that develop among actors as they interact (Berger, Cohen, & Zelditch, 1972; Berger, Fisek, Norman, & Zelditch, 1977; Strodbeck, James, & Hawkins, 1957; Wagner & Berger, 1993; Webster & Foschi, 1988). They shape who speaks up with confidence, who gets noticed and lis-

tened to, whose ideas “sound better,” and who becomes influential in the group. The result is that multiple small groups of interacting people across diverse contexts within the society develop local status structures that, in the main, are remarkably consistent with one another (Ridgeway & Walker, 1995). Similar categories of people are relatively privileged (i.e., influential and respected) or unprivileged in these structures. As a result, people in interactional groups, often without being aware of it, both enact and recapitulate societal structures of inequality, in the process legitimating those structures (Berger, Ridgeway, Fisek, & Norman, 1998). This is the process we seek to understand in this chapter. It requires that we examine interactional status hierarchies themselves, how they emerge and what they entail, as well as how and when they are shaped by widely shared status beliefs. Then we will briefly examine recent research on the development of status beliefs.

Early Research on Interactional Status Structures

Three sets of research in the 1940s and 1950s set the stage for the study of status and group structure and shaped the theory and research that followed. Bales (1950, 1970) developed empirical profiles of interaction in decision-making groups of three to seven undergraduates who met for several hour-long sessions. The students were unacquainted Harvard sophomore males with no appointed leader. Despite the initial lack of structure and the social homogeneity of the members, these groups quickly developed interactional inequalities that became stable after the first hour session and continued to structure interaction in later sessions (Bales, 1950). This result has often been replicated (e.g., Fisek & Ofshe, 1970).

Bales (1970) found that the most talkative member of these groups talked considerably more than the others, usually accounting for 40% or more of the total speech acts. The most talkative person was also the person who was addressed most often by others. Also, the higher the person's participation rank in the group, the more likely he was to be rated by others as having the best ideas and doing the most to guide and influence the group. Thus stable hierarchies developed in four correlated behaviors: participation initiated, opportunities given to participate, evaluations received, and influence over others. These hierarchies constituted behavioral power and prestige orders, or status structures, in the groups.

The highest ranked member of the status structure, being the most influential, was in effect the emergent leader of the group. A high-status group member becomes the group leader by assuming a responsibility for directing the group that is implicitly or explicitly acknowledged by other members. In the groups Bales studied, the highest-status member was acknowledged by others as the person who did the most to guide the group. The leadership of groups is virtually always composed of the person or persons at the top of the group status structure.

In most of the groups Bales studied, status structures developed smoothly and quickly, often in minutes. In a few groups, initial power struggles occurred between some members, slowing but not stopping the development of a stable status structure. If stable

inequalities emerge quickly in unstructured groups of social equals, Bales (1950) suggested that status hierarchies are likely in virtually any group.

A second set of classic studies provided an empirical picture of the way status structures develop when group members are not homogeneous but differ in socially significant ways (Strodtbeck et al., 1957; Strodtbeck & Mann, 1956; Torrance, 1954). Strodtbeck et al. (1957) observed simulated juries composed of people drawn from actual jury pools in the United States. Clear hierarchies of participation, evaluation, and influence developed that were much like those Bales observed in homogeneous groups. However, jurors' status in the larger society, as indicated by their occupations and sex, predicted the ranks they attained in the interactional status structures that emerged and organized jury deliberations. Occupational status and sex predicted how active and influential people became on the jury, how competent and helpful they were seen to be by others and how likely they were to be chosen jury foreman (a granting of leadership to the high-ranking member of the status structure).

A third body of early research demonstrated the powerful behavioral consequences of status structures once they are established. Riecken (1958) showed that the same idea expressed by a talkative group member was perceived by others as more valuable than when proffered by a less talkative member. Sherif, White, and Harvey (1955) found that group members overestimated the quality of performances by their high-status members and underestimated the performances of low-status members, giving high-status members an advantage in appearing skilled and competent. In addition to such perceptual biases, Whyte (1943) in a classic study of a street-corner gang, found that group members also pressured one another to actually perform better or worse to keep the quality of their contributions in line with their standing in the group.

By the 1960s, research had demonstrated that stable status structures, consisting of hierarchies of participation, influence, and evaluation, tend to emerge fairly quickly in interacting groups of all sorts. When group members differ in their social status outside the group, the standing they achieve in the interactional status structure tends to reflect their outside status, a process now called *status generalization* (e.g., Webster & Foschi, 1988). Finally, it had been shown that once established, interactional status hierarchies shape the quantity of members' contributions to group activities, judgments of the quality of those contributions, occasionally the actual quality of members' performances, and perceptions of members' competence and skill at group activities. The problem that remained was to develop and test a theoretical account that could explain this empirical picture and predict when and how it might vary or change. This has been the focus of subsequent research.

Theoretical Approaches

Four general theoretical perspectives have been used to explain the emergence and nature of status structures in groups: exchange theory, functionalism, symbolic interactionism, and conflict-dominance. According to exchange theory (Blau, 1964; Homans, 1961), status hierarchies emerge from group members' rational interests in maximizing the col-

lective rewards available to them by offering deference and influence as incentives for valuable contributions to collective activities. Among the resources that affect the perceived value of an actor's contributions to the group are attributes (e.g., gender or education) that carry status value in the surrounding society.

The functionalist approach views status structures as a mechanism that groups must develop to adapt and survive in their environment (Bales, 1950; Hare, Borgatta, & Bales, 1955; Parsons & Bales, 1955). Status hierarchies organize individual efforts for effective decision making and collective action in regard to group goals and the environment. When more competent members are given higher status and influence, the group adapts and survives more successfully.

Symbolic interactionism, which has been a distinctively sociological perspective within social psychology, views interaction as a process by which actors construct shared meanings, including the shared meaning and social value of self and others in the situation, in order to conduct joint action (Alexander & Wiley, 1981; Stryker & Statham, 1985). The status order is implicitly negotiated as each actor attempts to present and have accepted a valued social "face" but depends on the interactional support of others to successfully enact that face within the group (Goffman, 1956, 1959). Thus, status hierarchies arise out of the interactional requirement to create shared definitions of self and other in addition to actors' desire to be defined in a socially valued way.

Exchange, functionalist, and symbolic interactionist approaches all emphasize the goal-oriented nature of interaction and the positive interdependence it creates among actors. Because of their interdependence, actors must cooperatively exchange deference for something they jointly want or need (rewards, functional task organization, a shared system of meaning). As a result status is more *given* than *taken* and is primarily cooperative in nature.

The conflict-dominance approach, in contrast, views status as a process that arises primarily from negative interdependence created by competition over scarce resources (food, mates, rewards, power). Individuals use physical and social signs and behaviors to intimidate one another and establish rank in the hierarchy and access to resources (Keating, 1985; Lee & Ofshe, 1981; Mazur, 1985; Mueller & Mazur, 1996). One person may immediately (and apparently cooperatively) defer to another with superior dominance signs, including signs of social standing outside the group. On other occasions, usually between people with more evenly matched dominance signs, there may a visible contest for status rank. There is some evidence that dominant appearing facial expressions can be correlated with rank in status hierarchies (Keating, 1985; Mueller & Mazur, 1996).

How can we adjudicate between the cooperative and competitive sources of status hierarchies in groups? Evidence indicates that most status allocation is uncontested (Mazur, 1973). Current dominance approaches grant a role for cooperative as well as competitive processes in the formation of hierarchies not only among people but also other primates (Mazur, 1985; Mitchell & Maple, 1985). There may be, in fact, structural reasons why status allocation in goal-oriented interaction is generally not primarily competitive (Ridgeway & Diekema, 1989).

In a goal-oriented setting, actors have three sets of interests. They have a cooperative interest in deferring to one another on the basis of expected contributions to the goal in order to maximize collective rewards. They also have a competitive interest in dominat-

ing others to increase their personal share of the rewards. Finally, and importantly, they have an interest in ensuring that all *other* actors grant status on the basis of expected contributions to the goal so that there will be some collective awards to claim. This third interest means that actors are likely to pressure others to defer on the basis of expected contributions, whatever they seek for themselves. Consequently, even if each actor seeks only personal dominance, each is likely to face a coalition of others unwilling to see status granted on any basis other than expected contributions. This structural situation effectively creates implicit norms that make deference on the basis of expected contributions the acceptable, legitimate basis for status in goal-oriented settings (Ridgeway & Diekema, 1989).

Experimental tests of this argument support it. In goal-oriented groups, members intervene to sanction another who claims status through threatening dominance behaviors without consideration of task contributions and the domineering members do not become influential (Carli, LaFleur, & Loeber, 1995; Driskell, Olmstead, & Salas, 1993; Ridgeway, 1987; Ridgeway & Diekema, 1989). Because of this normative control process, dominance alone is not an effective means of gaining status in goal-oriented interaction.

The positive interdependence created by a shared goal appears to give rise to implicit norms that coerce actors from pursuing purely competitive claims to status without regard to contributions to the collective. These norms do not eliminate individuals' competitive interests from the status process, however. They redirect them so that actors compete to appear competent and socially valuable in regard to the goal in order to "deserve" a more rewarding position in the status hierarchy. Thus competition is harnessed to the cooperative process of pursuing collective goals. The status structure that emerges represents a collective resolution of the mixed-motive situation that actors face in goal-oriented groups.

Status Characteristics and Expectations States Theory

The theoretical approaches described above provide general orientations to status processes rather than a systematic theory. Drawing diverse insights from all of them, expectations states theory and its major subtheory, status characteristics theory, attempt to provide a systematic account of how status structures emerge in groups and how they are shaped by the outside status of their members (Berger et al., 1977; Fisek, Berger, & Norman, 1991; Wagner & Berger, 1993; Webster & Foschi, 1988). Currently, it is the theory of status processes that is most developed conceptually and best documented empirically.

Expectation states theory is a formal theory organized around a core set of assumptions. It employs formal graph structures to represent the actors and status information that is salient in a given situation. A mathematical calculus based on these graphs allows the theory to make precise predictions about the nature of the status structure that will emerge among a given set of actors in a given context (for a brief explanation of status graphs, see Webster & Whitmeyer, 1999; for detailed procedures, see Balkwell, 1991; Berger et al., 1977; Fisek et al., 1991).

Expectation states theory assumes a situation where actors are oriented toward the accomplishment of a collective goal or task. Status structures emerge, it argues, as a consequence of the process by which actors in a group compare and define themselves in relation to one another in order to act toward the collective task. The inequalities in participation, evaluation, and influence that develop in such situations are highly correlated because they reflect an underlying structure of expectations that the actors form for one another. In deciding how to act, how much to speak up, who to listen to, how to evaluate each other's suggestions, and whom to support when disagreements develop, actors draw on shared cultural beliefs about the implications of their distinguishing characteristics and of events during interaction to form an implicit *order of performance expectations* for those in the group. These *performance expectations*, which are frequently implicit assessments rather than conscious judgments, are anticipations of the likely usefulness of each actor's contributions to the task compared to another's.

Once formed, the order of performance expectations shapes actors' behaviors in the situation in a self-fulfilling fashion, as expectations are known to do (Harris & Rosenthal, 1985; Miller & Turnbull, 1986). The greater the expectation advantage of one actor over another, the more likely the first actor is to be allowed chances to perform in the group, the more likely she is to speak up and offer task suggestions while the second actor hesitates, the more likely she is to have her suggestions positively evaluated, and the less likely she is to be influenced when there are disagreements. In this way, the order of performance expectations creates and maintains a hierarchy of participation, evaluation, and influence among the actors that constitutes the group's status structure.

If the status structure rests on the relative expectations actors hold for one another, then it is crucial to specify the social factors that shape these expectations. Expectation states theory posits three distinct processes. The first describes how actors' socially significant characteristics become salient in the situation, activating shared cultural beliefs about them that shape performance expectations. The second delineates the impact of social rewards on expectations and influence. The third addresses the development of patterns of behavioral interchange between actors, which also activate cultural beliefs that induce performance expectations. I will describe each process in turn along with the evidence in regard to it.

Status characteristics and group structure

Perhaps the most important way that actors' attributes affect the performance expectations held for them is through their status characteristics. *Status characteristics* are attributes on which people differ (gender, computer expertise) about which there are widely held beliefs associating greater social worthiness and competence with one category of the attribute (men, computer experts) than another (women, computer novices). Diffuse and specific status characteristics differ in the nature of the cultural expectations for competence that are associated with them. *Diffuse status characteristics* carry very general expectations for competence that do not have a defined or limited range as well as specific expectations for greater or lesser expertise at some particular set of tasks. For instance, cultural beliefs about gender, a diffuse characteristic in the United States and elsewhere

(Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Carli, 1991; Williams & Best, 1990), include general expectations that men are diffusely more able than women at most things. They also include, however, specific expectations that men are better at some particular tasks (e.g., mechanical tasks) while women are better at others (e.g., nurturing tasks). Thus, diffuse status characteristics such as gender or race in the United States carry expectations for both general and specific competence differences. In contrast, *specific status characteristics* only carry cultural expectations for competence at a specific, defined range of tasks, as in the cases of computer expertise or writing skills.

Whether or not a given attribute is a status characteristic for a group depends on whether the actors share cultural beliefs that make it so. Because status characteristics are socially constructed through cultural beliefs, they can vary between societies and over historical periods (Berger et al., 1977). Diffuse status characteristics based on social representations that are widely shared across diverse subgroups of a given society are the most pervasively important for group structure. In the United States, gender (Pugh & Wahrman, 1983), race (Webster & Driskell, 1978), age (Freese & Cohen, 1973), occupation (Conway, Pizzamiglio, & Mount, 1996; Strodtbeck et al., 1957), educational attainment (Moore, 1968), and physical attractiveness (Webster & Driskell, 1983) are among the attributes that function as diffuse status characteristics for most people.

Status characteristics, stereotypes, and social identity. It is useful to compare the cultural beliefs that constitute a status characteristic to group stereotypes and to social identity based on group categorization. It is well known that mere categorization encourages beliefs that favor one's own category over another (Brewer & Kramer, 1985; Messick & Mackie, 1989; Mullen, Brown, & Smith, 1992; Tajfel, 1978). Status beliefs, in contrast, are social representations that *consensually* evaluate one category as more status worthy and competent than another. Even those they disadvantage accept, as a social fact, that the other group is socially evaluated as better than their own (Ridgeway, Boyle, Kuipers, & Robinson, 1998; Sachdev & Bourhis, 1991). As a set of evaluative beliefs about social categories, status beliefs form an element of many widely shared group stereotypes. Importantly, the status element of group stereotypes, if present, is fairly similar across stereotypes that otherwise differ dramatically in content (Conway et al., 1996; Jost & Banji, 1994). For instance, the stereotypes of gender, of race/ethnic categories, and of occupations differ enormously in specific content. But each of these stereotype sets has in common a status element that associates greater worthiness and competence with one category of the distinction (men, Whites, professionals) than another (women, people of color, workers). Because of this similar status element, status characteristic theory argues that otherwise very different social distinctions can have comparable effects on the organization of interactional status hierarchies.

Status characteristics, expectations, and behavior. For any factor to affect the group's status structure, it must become *salient* in the setting for the actors. According to the theory, a status characteristic becomes salient under either of two conditions: when the actors differ on the characteristic (the principle of distinctiveness, e.g., Cota & Dion, 1986) or when the actors perceive the characteristic to be relevant to the group task. Consequently, if and how a status characteristic affects a status hierarchy depends on situational goals and

the way actors compare to one another on the characteristic. An attribute (e.g., a university degree) can advantage an actor in one setting (with a less educated group), have no impact in another (in a group where all have university degrees and a degree is not relevant to the collective goal), and disadvantage the actor in a third setting (with Ph.D.s). Although group status structures are shaped by the cultural status beliefs actors bring with them to the setting, the actual structure that emerges reflects the structure of the local setting itself. Virtually no status-valued attribute advantages (or disadvantages) an actor in all settings.

Once a status characteristic is salient in the setting, the cultural associations of competence it carries generalize to affect actors' expectations for their own compared to another's performance at the task at hand. Whether a status characteristic has become salient because it is perceived to be task relevant (e.g., gender in dating situation), or merely because it distinguishes among the members even though it is not initially task relevant (e.g., gender on a mixed-sex jury), affects the strength of its impact on the performance expectations members form for one another. In situations of task relevance, according to the theory's graph-theoretic representation, the competence associated with a status characteristic leads directly to assumptions about members' ability at the task at hand which, in turn, link the member with expectations for positive or negative contributions to the task. In situations where the characteristic is not initially task relevant, there is an extra inferential step that weakens the characteristic's impact on performance expectations. Possessing a more valued state of the status characteristic (being a physician, not a plumber on a jury) leads to assumptions about greater general competence which then lead to assumptions about more ability at the task at hand and to expectations for more valuable task contributions.

The process by which a status characteristic that differentiates the actors, but is not initially task relevant shapes performance expectations, is called a *burden of proof process*. Actors act as though the burden of proof rests with showing that a salient status valued distinction among the members should *not* be used to form expectations for one another. Essentially actors, unless something in the situation (e.g., a specific disassociation of a status distinction from the task) blocks them from doing so, use all salient status information, whether initially task relevant or not, to form differentiated performance expectations for one another, as research shows (Berger et al., 1972). It is through this process that diffuse status characteristics such as gender, age, race/ethnicity, and social class have moderate but pervasive impact on the organization of interactional hierarchies across a very large variety of settings in which they have no obvious initial relevance.

A substantial body of evidence supports this theoretical account of the status generalization process. In a meta-analysis of studies involving a variety of diffuse status (educational attainment, gender, military rank, race) and specific status (pretest scores) characteristics, Driskell and Mullen (1990) found support for the theory's central argument that external status affects power and prestige behaviors (influence, task contributions, etc.) indirectly through the performance expectations members form for one another rather than directly. Experiments also have demonstrated that, as the theory predicts, simple knowledge alone of an interactional partner's status characteristics relative to a participant's is sufficient to affect willingness to accept influence from the partner in task settings (for gender, Pugh & Wahrman, 1983; race, Webster & Driskell, 1978; age,

Freese & Cohen, 1973; educational attainment, Moore, 1968; specific abilities, Wagner & Berger, 1982; Webster, 1977). This occurs both when the status characteristic differentiates actors but is not initially task relevant (Moore, 1968; Pugh & Wahrman, 1983; Webster & Driskell, 1978) and when it is task relevant (Webster, 1977). Thus the impact of status characteristics on standing in interactional hierarchies does appear to be mediated by performance expectations and cannot be accounted for by assumptions about correlated differences in actors' behavioral assertiveness or nonverbal style.

Experiments also confirm that task-relevant status characteristics have a stronger impact on influence than do differentiating status characteristics that are not initially relevant to the task at hand (Wagner & Berger, 1982; Webster & Driskell, 1978). The differential impact of status characteristics based on their relevance to the task leads to some distinctive predictions of the theory. For instance, the theory predicts that in a mixed-sex group with a gender-neutral task, men will have an advantage over women in participation and influence. If the task is a masculine-typed one, men's advantage over women in these behaviors will be even greater. But if the task is a feminine-typed one, women will have a modest advantage over men in participation and influence. Several studies have found this pattern of behavioral inequalities in mixed sex contexts with neutral, masculine, or feminine tasks (Dovidio, Brown, Heltman, Ellyson, & Keating, 1988; Eagly & Karau, 1991; Wentworth & Anderson, 1984; Yamada, Tjosvold, & Draguns, 1983).

Combining multiple characteristics. In actual groups such as committees or work groups people commonly differ from one another on several status characteristics at the same time. Some of these salient status characteristics may be inconsistent with one another in their implications for a person's standing in the group. On a U.S. legal team, a member may not only be a Harvard trained lawyer, but also an African-American woman. A distinctive aspect of status characteristic theory is that it offers a procedure for making exact predictions for the order of performance expectations (and thus, the status structure) actors will construct from a given set of salient consistent and inconsistent status characteristics (Berger et al., 1977). The theory argues that people combine the implications of all salient status characteristics to form an *aggregated performance expectation* for each group member relative to the others.

The theory calculates this aggregation according to a principle of subset combining (Berger et al., 1977). The positive implications of all salient factors are weighted by their task relevance and combined, subject to a declining marginal impact of each additional consistent factor. The negative implications of all salient factors are similarly weighted and combined and then subtracted from the positive factors to produce an aggregated expectation for each actor. The theory argues that subset combining predicts actors' power and prestige behaviors heuristically without assuming that it describes actual cognitive processing.

Experiments confirm that people form influence hierarchies as though they were combining consistent and inconsistent status information (Webster & Driskell, 1978; Zelditch, Lauderdale, & Stublarec, 1980). There is evidence as well for a distinctive implication of the subset-combining principle. The addition of another status characteristic in a situation has a greater marginal impact on the status hierarchy if it is inconsistent, rather than consistent with other salient status information (Berger, Norman, Balkwell, &

Smith, 1992; Norman, Smith, & Berger, 1988). Berger et al. (1992) evaluated the ability of subset combining to account for the interactional hierarchies participants in experiments formed from sets of consistent and inconsistent status information, compared to three other information-processing principles. They found that subset combining provided much the best fit for the data. In a broader evaluation of status characteristic theory's ability to predict group status structures with its graph-theoretic model of salience, relevance, and aggregation, Fisek, Norman, and Nelson-Kilger (1992) compared theoretical predictions to data from 24 experiments, reporting a good fit.

Some useful implications can be derived from the theory's aggregation postulate. First, if a group member differs from another on two status characteristics that are inconsistent but one characteristic is initially task relevant while the other is not, then the member's behavior and standing in the group will be shaped more strongly by the task-relevant characteristic. Thus, if a woman with legal training works with a male partner with no legal expertise on a task with legal implications such as a rental agreement, she will have more influence despite her lower gender status. Second, if group members differ on a set of status characteristics that are equally relevant to the task, then the greater the degree of consistency among the characteristics, the greater the inequality among the members in the behavioral status structure. So status orders where status-valued distinctions cross-cut will be more egalitarian than those where multiple distinctions are aligned. Cohen and her colleagues have used this principle to design classroom settings that allow children of diverse social backgrounds to interact in an egalitarian fashion (Cohen & Lotan, 1997). Similarly, Brewer and colleagues argue that the dysfunctional effects of social categorization on work groups can be reduced if socially diverse teams are composed so that members' categorical identities cross-cut rather than align together (Brewer, 1995; Brewer, von Hippel, & Gooden, 1999).

Status in enduring groups. Diffuse status characteristics that are discernible from visual cues such as gender, race/ethnicity, and age, usually become salient and affect expectations and behavior from the initial moments of interaction. As the interaction proceeds, however, actors introduce more and more distinguishing information about themselves, bringing to light additional specific and diffuse status characteristics that modify the performance expectations held for them in an ongoing fashion. Similarly, over time, actors may receive some outside evaluation of the success or failure of their task contributions to the group. This is comparatively rare since the "tasks" of most groups are often complex (e.g., a management decision) and assessment of success is ambiguous. But when it occurs (decisions by the manager of an investment team lose money for an account), it has a powerful impact on performance expectations (Berger, Fisek, & Norman, 1989). Thus the status structures of groups evolve over time with new information and events, according to the theory.

Does this mean that the effects on the status structure of diffuse status characteristics such as gender or race/ethnicity (when not task relevant) are likely to be minimized over time as actors become more familiar with each other? Yes and no. Diffuse status characteristics have their clearest effects in the initial phase of interaction. Because they create expectations with self-fulfilling effects on behavior, however, they make it more difficult for actors to introduce countervailing information about themselves and they reduce the

impact of that information once it is introduced (Cohen & Roper, 1972). As a result of shaping initial expectations, diffuse status characteristics frequently have long-term effects on the status structures of enduring groups, as Cohen and Zhou's (1991) study of corporate research and development teams has demonstrated.

Foschi (1992, 1996, 1998) has shown that diffuse status characteristics such as gender may have enduring effects on status structures because, in addition to shaping performance expectations, they also create double standards for judging ability from success and failure. Performance expectations make it unlikely that the same contribution from a status-advantaged and a status-disadvantaged person will be seen to be of the same quality. Double standards mean that even if they are (due perhaps to an objective evaluation), a contribution of that quality will be seen as stronger evidence of genuine task ability (or weaker evidence of incompetence) for the status-advantaged person than the status-disadvantaged person (Biernat & Kobryniewicz, 1997; Foschi, 1996). Recall that status characteristics theory predicts an exaggerated status advantage for men on masculine tasks and a weak status advantage for women at feminine tasks. Using this prediction, Foschi (1996, 1998) argues that the double standards created by status characteristics provide an explanation for the well-known finding that success at masculine tasks is attributed more to ability for men but to effort for women while, for success at feminine tasks, ability attributions are less gender differentiated and even favor women (Swim & Sanna, 1996). Drawing on Tetlock (1983), Foschi (1996) shows that status-based double standards bias attributions of ability most strongly when judgements are made under conditions of low accountability for the outcome.

Rewards and status

Like status characteristics, actors' possession of socially valued rewards plays an integral role in the organization of group status structures. Expectation states theory argues that actors' expectations for rewards in a task setting are interdependent with their performance expectations and, consequently, their positions in the status structure (Berger, Fisek, Norman, & Wagner, 1985; Cook, 1975). It is a common observation in established hierarchies that valued rewards (pay, a corner office) tend to be distributed in accordance with rank and help maintain the relative power of those ranks (Homans, 1961). Because of the interdependence of performance and reward expectations, the theory predicts that when a status characteristic is salient in a setting, those disadvantaged by it will implicitly expect lower levels of rewards for themselves than will those advantaged by the characteristic. Research on the depressed entitlement effect among women compared to men supports this prediction (Bylsma & Major, 1992; Jost, 1997; Major, McFarlin, & Gagnon, 1984).

Another important implication of the theory is that rewards, like status characteristics, can create a status hierarchy among actors and modify positions in an existing hierarchy, because actors infer performance expectations from salient reward differences. In an experimental test of this argument, Cook (1975) showed that when a third party gave differential rewards to group members who had no other basis for evaluating their per-

performances on a shared task, the members used the reward differences to infer ability differences. Harrod (1980) and Stewart and Moore (1992) showed that allocating differential pay levels to participants in an experiment created corresponding influence hierarchies among them during interaction. These results highlight how the power or good luck represented in the unequal possession of rewards becomes legitimate status. By creating performance expectations, the unequal rewards appear to be “deserved” and, thus, justly bring respect, deference, and influence. Unequal rewards, according to the theory, combine with other factors such as salient status characteristics to determine the aggregated performance expectations that shape the behavioral status order in the setting.

Behavioral interchange patterns

In addition to status characteristics and rewards, a third factor that can have independent effects on performance expectations are the *behavioral interchange patterns* that develop among two or more actors (Fisek et al., 1991; Skvoretz & Fararo, 1996). Such a pattern occurs between two or more actors when one engages in assertive, higher-status behaviors (e.g., initiating speech, making a task suggestion, resisting change in the face of disagreement) that are responded to with deferential, lower-status behaviors by the other actor(s) (e.g., hesitating to speak, positively evaluating the other's suggestion, changing to agree with the other). The more such behavior patterns are repeated between the actors, the more likely they are to make salient for the actors cultural *status typifications*, which are shared beliefs about typical high status–low status, “leader–follower” behaviors. Following the common assumption that people speak up more confidently about things at which they are more expert, salient status typifications induce actors to assume that the more assertive actor is more competent at the task than the more deferential actor, creating differential performance expectations for them. In support of this argument, a variety of assertive verbal and nonverbal cues including taking a seat at the head of the table, having an upright, relaxed posture, speaking up without hesitation in a firm, confident tone, and maintaining more eye contact while speaking than listening have been shown in the United States to make an actor's ideas “sound better” and increase influence (for reviews see Dovidio & Ellyson, 1985; Ridgeway, 1987; Ridgeway, Berger, & Smith, 1985).

Behavior interchange patterns shape performance expectations most powerfully among those actors in a group who are equals in their external status characteristics and reward levels such as between two women in a mixed-sex group (Fisek et al., 1991). Behavioral interchange patterns are the means by which expectation states theory accounts for the development of status structures in homogeneous groups like those studied by Bales (1950, 1970).

When actors differ in status characteristics, the self–other performance expectations created by the status characteristics shape the actors' verbal and nonverbal assertiveness. Consequently, differences in status characteristics shape behavioral interchange patterns, as several studies have shown (Dovidio et al., 1988; Leffler, Conaty, & Gillespie, 1982; Ridgeway et al., 1985; Smith-Lovin & Brody, 1989). In a clear demonstration of expectation states theory's predictions in this regard, Dovidio et al. (1988) showed that when

mixed-sex dyads shifted from a gender-neutral task, where the man had a status advantage, to a feminine-typed task, where the woman had a status advantage, the actors' participation rates and assertive nonverbal behaviors reversed from a pattern favoring the man to one favoring the woman. Thus, between actors that already differ on status characteristics, behavior interchange patterns often add little new to the existing order of performance expectations.

Expectation states theory uses its graph-theoretical methods to specify how behavior interchange patterns combine along with status characteristics and rewards to create an aggregated order of performance expectations for actors in the setting. This, in turn, shapes the status structure of the group. Fisek et al. (1991) evaluated this model's ability to account for participation rates in open-interaction by fitting it to several existing data sets including Bales' (1970) original data from 208 groups. The results supported the model. Skvoretz and Fararo (1996) updated the model to provide more detailed predictions about the dynamic evolution of status structures from combinations of status characteristics and behavioral interchange patterns. They similarly report a good fit of the model with participation data from six-person groups that systematically varied in composition from all male to all female.

Second-order expectations

Expectation states theory refers to an actor's own performance expectations for self and others in the situation as *first-order expectations*. Just as people generally overestimate the extent to which others see things as they do (Marks & Miller, 1987), actors usually presume that their own self-other expectations are shared by others in the situation and act on them accordingly (Troyer & Younts, 1997; Zelditch & Floyd, 1998). Occasionally, however, another actor in the situation explicitly communicates his or her view of the first actor compared to others in the group, creating *second-order expectations* for the first actor. Second-order expectations are what a focal actor, *p*, believes that another in the situation, *o*, thinks about *p*'s and *o*'s relative abilities (Moore, 1985; Webster & Whitmeyer, 1999). When second-order expectations develop in a situation, they affect an actor's own first-order expectations.

Moore (1985) found that when participants in an experiment with no information about their competence compared to a partner heard their partner's views about their relative competence levels, these second-order expectations shaped the first-order expectations participants formed for themselves compared to the partner. Troyer and Younts (1997) showed that when group members receive second-order expectations that conflict with their own first-order expectations, they combine the information in the two to create aggregate, revised performance expectations that become the basis for their interaction in the group. Drawing on previous research, Webster and Whitmeyer (1999) propose that the impact of another's second-order expectations on *p*'s own expectations is a function of the performance expectations *p* holds for that other. Second-order expectations communicated by an actor held in high regard will have a stronger impact than will expectations imputed by a less well-regarded actor. Webster and Whitmeyer (1999) update expectation states theory's graph-theoretic model to show how

second-order expectations combine with all other salient status information to create the aggregate performance expectations upon which group members enact their status structure.

Overcoming status generalization

Given the pervasive but often unjust impact of external status characteristics on influence and respect in goal-oriented settings, researchers have naturally been concerned with devising ways to overcome the status generalization process. One obvious possibility is to try to create behavioral interchange patterns between actors that are inconsistent with their status characteristics. Evidence suggests, however, that this does not always succeed. Cohen and Roper (1972), for instance, reported that African-American schoolchildren who were trained to speak up confidently encountered resistance rather than deference from their European-American team mates. Consequently, behavior patterns inconsistent with racial status characteristics did not form.

Cohen and Roper (1972) then devised a different technique to overcome status generalization. They directly manipulated the performance expectations the children held for one another by introducing additional specific status characteristics that were inconsistent with the children's diffuse racial status. The researchers trained the African-American children in a skill which the children then demonstrated to their White classmates. As predicted, this overcame the effects of race so that the African-American children became active and influential on their teams. Cohen and Lotan (1997) have adapted this technique to overcome status generalization in a variety of classroom settings. In a related technique, Wagner, Ford, and Ford (1986) have shown that status generalization can be overcome if an outside evaluator provides feedback on the group members' performances that directly disconfirms expectations based on a status characteristic.

Studies have shown that women as well as African Americans often encounter resistance from status-advantaged others when they attempt to overcome the low expectations held for them by speaking up assertively in interaction (Butler & Geis, 1990; Carli, 1990; Carli et al., 1995). Meeker and Weitzel-O'Neill (1977) argued that the cultural beliefs associated with status characteristics make it legitimate for status-advantaged people to assert themselves in interaction. But the same beliefs make such behavior from the status-disadvantaged seem like an illegitimate and self-interested grab for power that is not "justified" by presumed competence. In support of this argument, studies have shown that if women in male groups combine speaking up persuasively with expressions of their cooperative, group-oriented concerns rather than self-interest, they can assuage resistance and achieve substantial influence in the group (Carli et al., 1995; Ridgeway, 1982; Shackelford, Wood, & Worchel, 1996). Thus, this is a second way to overcome status generalization. Notice that neither this technique of combining assertiveness with group orientation nor the technique of introducing additional inconsistent specific status characteristics directly challenges the cultural beliefs behind the offending diffuse status characteristic. These techniques allow a status-disadvantaged individual to overcome low expectations and achieve equal influence, which is an important accomplishment. They

do so, however, by requiring that the individual be either “better” or “nicer” than the status advantaged.

Legitimation and compliance to directives

More recently, expectation states researchers have developed a formal theory of the way diffuse status characteristics affect the legitimation of interactional status hierarchies (Berger et al., 1998; Ridgeway & Berger 1986). Since the person at the top of the status hierarchy (i.e., the most influential member) is usually also the group leader, this theory has implications for the exercise of leadership in goal-oriented groups. When the most influential member is advantaged in diffuse status characteristics, those characteristics give this person added cultural support that enables him or her to successfully go beyond persuasion to the exercise of directive power, including the use of dominance behavior. Thus the leader of a legitimated status order can more easily gain compliance with directive behavior and, thus, wield power more broadly. An initial test of this argument supports it (Ridgeway, Johnson, & Diekema, 1994).

Ironically, this argument suggests that more meritocratic leaders, whose positions are based on skills demonstrated in the situation despite low diffuse status, are less likely to have the added support of legitimacy than are leaders whose positions are based on multiple diffuse status advantages. When leaders who lack the added support of legitimacy attempt to act directly in the group (rather than just persuasively), they are often resisted and disliked for doing so (Burke, 1971; Ridgeway et al., 1994). Problems of legitimacy due to low diffuse status may account for the resistance women leaders in male groups sometimes encounter when they attempt to exercise directive power (Butler & Geis, 1990; Eagly, Makhijani, & Klonsky, 1990; Kanter, 1977).

Status Beliefs

Beliefs that attach worthiness and competence to people’s distinguishing characteristics and social categories clearly play a primary role in the emergence of group structure in interactional contexts. What more do we know about the nature of these beliefs and the processes by which they might arise? Studies of intergroup relations are often considered a topic that is quite separate from the study of group structure. The importance of status beliefs for group structure, however, suggests that intergroup relations and interactional group structure are better seen as interdependent processes. In fact, most naturally occurring, established intergroup relations involve groups of unequal standing or power (Jackman, 1994; Sidanius, 1993; Sidanius & Pratto, 1999).

Recall that status beliefs are distinguished by the fact that both high- and low-status groups consensually evaluate the high-status group as more worthy and competent than the low-status group. Social identity researchers have demonstrated that when an established status relationship exists between groups (e.g., between status differentiated occupations or between groups labeled in experiments as better or worse performers),

high-status groups evaluate their own group as much more competent, showing strong ingroup bias. Low-status groups show little ingroup bias and, in fact, often evaluate their own group less favorably than the other group on status-relevant dimensions like competence (Jost & Banji, 1994; Mullen et al., 1992; Sachdev & Bourhis, 1987, 1991; Spears & Manstead, 1989). On status-unrelated (but still positive) dimensions, usually likeability or cooperativeness, low-status groups favor their own group more strongly than do high-status groups, possibly in compensation for conceding that the high-status group is better on the more valued dimension of competence (Blanz, Mummedey, & Otten, 1995; Brewer, Manzi, & Shaw, 1993; Mullen et al., 1992).

Other research dealing with both high- and low-status actors in a group structure and high- and low-status groups in a society shows a similar pattern. In a study of male, female, and mixed-sex police dyads, Gerber (1996) found that the high-status partner, regardless of gender, was perceived as more instrumental and dominating while the low-status partner was seen as more expressive. Conway et al. (1996) demonstrated that high-status groups were perceived as more agentic and low-status groups as more communal whether status was based on existing status distinctions such as occupation or gender or on status labels created by the experimenter. It is clear that when individuals or groups have unequal status, people, whether members of the groups or observers (Conway et al., 1996) perceive those in the status-advantaged category to be more competent and leaderlike, while those in the disadvantaged category are seen as "nicer." Indeed, one might say that the evaluative characterizations that make up status beliefs are fundamentally what constitute social distinctions as *status* distinctions in the first place. Following this logic, some have argued that it is status inequality between the sexes that is responsible for the stereotypic traits associated with men and women (Conway et al., 1996; Geis, Brown, Jennings & Corrado-Taylor, 1984; Wagner & Berger, 1997).

How or why do status beliefs develop? How do such beliefs become widely held in society? In particular, why would members of a social group accept status beliefs that disadvantage them? After all, it is the consensuality of status beliefs that make them a force in social relations rather than idiosyncratic individual biases.

The early 20th-century sociologist Max Weber ([1921] 1946) argued that groups commonly acquire an economic advantage first before developing higher status in society. Jackman (1994) and Jost and Banji (1994) argue that the evaluative characterizations of status beliefs develop to justify or legitimate an existing relationship of inequality based on coercive power, wealth, or other advantages. Through what processes could this occur?

Status construction theory argues that if status beliefs about social groups are such a force in interaction, then interactional contexts may also be an important arena for their creation and maintenance (Ridgeway, 1991, 2000; Ridgeway & Balkwell, 1997; Ridgeway et al., 1998; Webster & Hysom, 1998). Interaction may be the arena in which the possession of economic or other advantages by some members of a social group are converted into cultural beliefs that portray all members of that group as more worthy and competent than those of another group, independent of resource or other advantages. Research has shown that resource differences such as pay create corresponding differences in performance expectations. Differential expectations, in turn, shape behavior and create a local status hierarchy that favors the resource advantaged (Harrod, 1980; Stewart & Moore, 1992). If the resource advantaged in an interactional context also differs from the

resource disadvantaged on another salient, distinguishing attribute (one is an A, the other a B), interactants may associate their situational differences in status and apparent competence, actually due to resources, with their A/B difference. This is particularly likely if such encounters are repeated with similarly advantaged or disadvantaged As and Bs, as is likely if more As than Bs in the society are rich.

Ridgeway et al. (1998) confirmed that status beliefs could be created in this way. When participants in an experiment twice interacted with a partner who was paid more, differed on a salient characteristic, and became influential on the group task, they formed beliefs that “most people” attribute more respect, status, and competence, but less consideration, to people in the partner’s group than to those in their own group. In contrast, pay-advantaged participants thought most viewed their own group as more respected, competent, but less considerate, than the other group.

In a subsequent experiment, Ridgeway and Erickson (in press) demonstrated that a person who holds status beliefs about a distinguishing characteristic, and treats a resource peer who differs on that characteristic in a status-evaluated way can induce both the peer and third-party observers to take on the status belief as well. Thus interaction can spread beliefs from those that have them to others.

Status construction theory combines these arguments about the circumstances in which interaction can create and spread status beliefs with other arguments about the likelihood that people will interact who are similar or different in the distinguishing characteristic and resources (or any other factor that systematically biases the development of interactional status hierarchies) (Ridgeway, 1991). “Doubly dissimilar” encounters between those who differ in both resources and the characteristic (e.g., rich As and poor Bs) are usually a small minority of all encounters, given homophile preferences. Because people circulate in and out of these belief-fostering encounters, however, and because beliefs acquired there are spread to others, a diffusion process results that can create or maintain widely shared status beliefs about the distinguishing characteristic. Doubly dissimilar encounters become beacons that continually broadcast support for the status belief into the population as a whole. Simulations confirm that these interaction and diffusion processes are sufficient to create consensual status beliefs in a society under many conditions (Ridgeway & Balkwell, 1997).

What is it that causes people to take on status beliefs that disadvantage their own group in these status construction experiments? Ridgeway (2000; Ridgeway et al., 1998) argues that the key lies in the way aspects of local situations and contexts give people the impression that “others” evaluate their own group as less respected and competent than another. Essentially a local appearance of consensus on the status evaluation of the groups causes people to form beliefs that “bootstrap” the development of real, widely shared status distinctions.

Conclusion

It appears that the influence and respect individuals achieve in the group status structures that organize everyday interaction and the status accorded to whole groups or social cat-

egories of people co-determine each other and constitute a central dynamic in the structure of inequality in a society. The key mechanism that connects the status structures of interactional groups and the status positions of groups in society are widely shared cultural beliefs that associate greater social worthiness and competence with those that belong to some social categories compared to others. The multiple local interactional hierarchies that form across diverse contexts in society are a vital arena for creating and maintaining the consensuality of these status beliefs. These local status structures are the context in which the important link to apparent differences in *competence* between people from different social categories is enacted. Through the self-fulfilling effects of status beliefs on performance expectations and behavior, the link to competence is displayed for all. The link to competence, in turn, is an essential step in the legitimation of social inequality based on a categorical distinction.

While there have been important contributions to the study of group status structures from a variety of theoretical approaches, including functionalism and dominance, expectation states theory is currently the predominant systematic account. This approach argues that status structures are organized by the order of performance expectations, a kind of implicit ranking of estimated competence in the situation that members form for one another when faced with a collective goal. Several decades of research have developed expectation states theory into a graph-theoretic theory that specifies the impact of status characteristics, rewards, behavioral interchange patterns, and second-order expectations on performance expectations that, in turn, shape the patterns of participation, evaluation, and influence among group members (Wagner & Berger, 1993). The theory is generally well supported by experimental evidence as well as studies of real groups in the classroom and elsewhere. More recent developments have begun to address the way status characteristics affect the legitimacy accorded to a given local status structure (Berger et al., 1998). Status structures that confirm cultural status beliefs are more likely to be treated as legitimate and, thus to wield more power over their members and outsiders they deal with (Ridgeway et al., 1994).

Experimental and other research on group status structures and on expectation states theory has largely been conducted by sociologists. Research on group stereotypes and on social identity and self-categorization, on the other hand, has been primarily the province of psychologists. Both groups of researchers have often proceeded without a detailed awareness of the work of the other. Now, with the growing awareness in both disciplines of the importance of status and legitimating ideologies to the maintenance of long-term structures of inequality, there is a greater need than ever for cross-fertilization of ideas and research across disciplinary boundaries. Social status, like other dimensions of inequality in a society, is a complex and dynamic process with structural level, interactional, and individual aspects.

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CHAPTER SIXTEEN

Leadership Effectiveness: An Integrative Review

Martin M. Chemers

While there are almost as many definitions of leadership as there are theorists of leadership, a widely accepted view is that leadership is “a process of social influence through which an individual enlists and mobilizes the aid of others in the attainment of a collective goal.” Several elements are significant in this definition. The goal is “collective,” and leadership is a collective process – that is, leadership exists as a response to collective need. Secondly, leadership is a process of “influence.” Leadership is not a coercive process. Leadership involves obtaining and utilizing the assistance of other people. In all these ways, leadership is a *social* phenomenon. Its roots and its purposes are in the nature of group activity, and its full understanding is most possible when based in an understanding of social processes and their psychological underpinnings. Thus, it is very appropriate that the field of social psychology remains the conceptual home for leadership theory and research. In this chapter, I will review the dominant theoretical perspectives in the leadership literature and attempt to integrate them into a coherent whole. (Also see Lord, Brown, & Harvey, this volume, chapter 12.)

Functions of Leadership in Groups and Organizations

Organizational effectiveness and the successful leadership that makes productive effort possible are complex processes. It is helpful to approach the study of such processes by asking what are the key functions that leaders, groups, and organizations must accomplish to be successful, and what are the key elements of each of those functions.

Organizational functions

Organizations are complex systems of interpersonal relationships that exist within a dynamic environment. To be viable and effective, organizations must accomplish two basic functions – one concerned with internal integration and the other with external accommodation (Chemers, 1993; 1997; Schein, 1985).

Internal maintenance. The first vital function of any organization is to maintain the integrity and reliability of its internal systems. This function can be labeled internal maintenance. Every organization is confronted with innumerable routine and recurrent events. Organizations must develop reliable, predictable, and accountable systems for dealing with these stable events and for developing a basic integrity to organizational functioning. For example, a university must select and enroll students, assign classes, locate classes, assign faculty to teach, make payrolls, maintain buildings, and many more such activities. For the organization to be efficient, these recurrent events must be carried out in ways that are consistent over time and place (i.e., reliability), that allow others to anticipate those activities (i.e. predictability), and that allow for assessment of the success of those activities (i.e., accountability). In his classic analysis of social influence, Festinger (1950) argued that a key function of informal social communication is to allow members of a group to coordinate their efforts by developing a common goal and expected behaviors (norms) for acting in pursuit of those goals. This is even more true of large organizations which must establish internal maintenance to ensure efficient, goal-directed activity.

External adaptability. If the environments in which organizations functioned were completely stable and unchanging, the reliable and efficient systems of internal maintenance would be sufficient for organizational success. However, all organizations exist in environments that are, in some degree, dynamic, and many organizations must function in highly unstable and unpredictable circumstances. To deal with changing milieus, organizations must accomplish the function of external adaptability. Any living organism in a dynamic environment – and complex organizations certainly resemble living organisms – must develop methods for detecting changes in the environment (i.e., sensitivity), an ability to change internal systems in response to external change (i.e., flexibility), and a desire to accommodate organizational functioning to maximize adaptation to the environment (i.e., responsiveness). Thus, a competitive university at the beginning of the twenty-first century must be aware of changes in the environment with respect to student interest, research funding, community needs, governmental regulations, etc., and must modify its academic programs, research centers, accounting systems, public relations, community outreach programs, and a myriad of other activities to maximize the fit between internal and external environments.

The greatest challenge facing organizations is caused by the fact that internal maintenance and external adaptability are, to some degree, incompatible functions. Efforts to make an organization more reliable and predictable may impede its ability to be flexible and responsive. Accounting systems that maintain fiscal integrity cannot be modified

easily. Academic programs (e.g., general education requirements) that reflect basic values of the institution cannot respond, without careful consideration, to every shift in student interest. Balancing internal maintenance and external adaptability is crucial to organizational survival.

Leadership functions

Leadership is one of the major vehicles by which organizations achieve the functions described above (Chemers, 1997). Each of the organizational functions has a corollary leadership function at the level of the group or team. When groups are confronted with tasks that are stable, predictable, and well understood, the primary responsibilities of the leader are to motivate and guide subordinates. The leader must arouse in the followers a desire to contribute to group goal attainment, and then must provide appropriate levels of structure and guidance to allow followers to make such contributions. However, when the group's task is complex, dynamic, or unclear, the leader's responsibility shifts to that of accumulating and processing information to make decisions and solve problems to assist the group in orienting itself toward goal attainment.

Like the organizational functions, these two classes of leadership functions are also somewhat in contradiction. The strategies and behaviors that might be most effective in guiding and motivating followers – for example, articulating a clear goal, giving clear instructions – may not be possible when the leader is unclear about how to proceed. Alternatively, the participative atmosphere most appropriate to solving problems and enhancing follower intrinsic motivation could be wasteful when clear procedures already exist and efficiency is crucial to competitive success. Effective leadership involves balancing these functions in order to maintain a group that is cohesive, motivated, and directed. The objective of this chapter is to survey the empirical literature to identify and elaborate the critical elements that allow individuals to fulfill the daunting challenges of leadership effectiveness.

Elements of Effective Leadership

If we return to our definition of leadership as “a process of social influence in which an individual enlists and mobilizes the help of others in attaining a collective goal,” we may infer some of the key elements of effective leadership.

First, leaders must enlist the aid of others. That is, they must act as credible sources of influence that encourage others to follow them, that is, they must establish legitimacy. Second, they must mobilize others. One aspect of this mobilization process entails motivating and focusing the energy of followers toward the collective intent. That is, leaders must establish a relationship with followers that encourages followers to apply their capabilities and efforts for the common purpose. This emphasis on the motivation of followers might be thought of as internal to the group process. However, another aspect of mobilization, directed more toward the external task environment, involves the application of

group members' knowledge, capabilities, energy, and material resources to the attainment of the group's goal. I label these three elements of effective leadership *image management*, *relationship development*, and *resource deployment*.

Image management

The decision to become a follower is an important one. It involves the loss of personal autonomy as one chooses to relinquish some independence of action and to expend one's efforts under the direction of another person. It also involves a degree of risk, as the follower has now placed some probability of personal goal attainment in the hands of another person. The decision to follow depends on the perception of the leader as credible and capable. The leader must be worthy of status and legitimacy. The would-be leader, must "look like a leader." The leader candidate must project an image that evokes a sense of trust and commitment in the follower. A considerable portion of leadership research over the last 40 years has been concerned with the question of how such an image is established and maintained.

Legitimacy. Some of the earliest of the modern work on leadership credibility (and still among the best work) was embodied in Hollander's (1958, 1993) "idiosyncrasy credit" model of leader legitimation and status bestowal. In a series of careful laboratory experiments, Hollander showed that leaders accumulate a virtual "bank account" of credibility (credits) that facilitates social influence and gives the individual latitude to introduce new ideas (idiosyncrasy) as they establish legitimacy. Legitimacy is, in turn, based on evidence that the leader is competent in the capacities needed to move the group toward its goal and is trustworthy, based on past adherence to group norms. Thus, through competence and conformity, the would-be leader establishes the legitimacy to influence others and introduce new ideas that may help the group to accomplish its goals. Kouzes and Posner's (1987) popular management treatise, *The Leadership Challenge*, reported a survey of 1,500 workers describing their best leader which found that honesty and competence were the two more important traits of outstanding leaders. How, then, do potential followers decide that a leader is competent and trustworthy.

Leader perception. Much of the early research on leadership involved work on the development of scales for measuring leader behavior. One of the most popular and enduring of these instruments is the Leader Behavior Description Questionnaire (LBDQ) (Halpin & Winer, 1957; Fleischman & Harris, 1962). The LBDQ was derived from factor analyses of extensive ratings of leader behavior in a variety of settings. The scale comprised two main factors. The first factor, *Initiation of Structure*, measured the degree to which a leader engaged in behaviors, such as work assignment, criticism of errors, emphasizing productivity, that are oriented toward providing task-relevant structure for goal achievement. The second factor, *Consideration*, measured leader behaviors, such as being friendly, making jokes, being considerate of followers' needs or feelings, that are oriented toward maintaining a positive climate and good morale in the group. Although early hopes that

one or the other of these factors would prove predictive of leadership effectiveness were not borne out (Korman, 1966), the measure remained a popular adjunct to leadership research. The widespread interest in leader behavior and the scales used to measure it led to the very interesting discovery that perceptions of leadership behavior were extremely prone to error.

Eden and Leviatan (1975) asked subjects to provide ratings of leader behavior after being given extremely limited information about a hypothetical production facility. Not only were the subjects willing and able to provide such ratings, but subsequent analyses revealed the same factor structure as that obtained when actual followers rated actual leaders' behavior. Staw (1975) showed subjects a videotape of a group working on a task. Although all subjects saw the same videotape, they were given false feedback about the group's performance with half told that the group had performed very well and half told the opposite. The performance feedback strongly affected the subjects' perceptions of the leader's behavior, that is, more active and positive leader behavior was rated in the "high performance" group than in the "low performance" group. A similar finding was reported by Rush, Thomas, and Lord (1977), who asked business school students to rate hypothetical leaders of high and low performing organizations. Clear differences indicated that the leaders of successful organizations were *assumed* to engage in high level of both task and morale-related behaviors.

Information-processing approaches. Lord and his associates (Lord, Foti, & DeVader, 1984; Lord, Foti, & Phillips, 1982; Lord & Maher, 1990, 1991; see also Lord, Brown, & Harvey, this volume, chapter 12) developed an information-processing model of leader perception. They argued that followers form impressions of leaders in much the same way that other social perceptions are developed. Individuals process information in two modes (Shiffrin & Schneider, 1977); a *controlled* mode, which involves careful and rational attention; and an *automatic* mode, involving much less effortful and attentive processing. Automatic processing is guided by "knowledge structures" (Galambos, Abelson, & Black, 1986) such as scripts, categories, implicit theories, prototypes, etc. One powerful class of knowledge structures is prototypes (Cantor & Mischel, 1979; Rosch, 1978) which are category-based repositories of information about certain types of people, including typical traits, characteristics, and behaviors.

Lord, Foti, and Phillips (1982) demonstrated that people hold prototypes of leaders which include traits and behaviors. Lord, Foti, and DeVader (1984) had subjects read vignettes about leaders which varied in the number of prototypical behaviors that were ascribed to the leader. The degree of leadership prototypicality of the vignettes was strongly related to leadership perceptions of the subject. Furthermore, when prototypicality was sufficient to evoke a perception that the leader was effective, subjects added behaviors to their descriptions that were not in the vignette, but were prototypical of leaders in general.

Observers derive judgments of leadership from both direct and indirect information about the leader's behavior and about the success of the leader's organization, and those judgments influence their expectations and reactions to that leader. Once a person is seen as a leader, other perceptions are likely to be consistent with expectations for the leadership category prototype.

In an interesting extension of this approach, Hains, Hogg, and Duck (1997; Hogg, Hains, & Mason, 1998; also see Hogg, this volume, chapter 3) melded information-processing theory to social identity theory (Tajfel & Turner, 1986) to determine which aspects of a leader's image would be most important in giving a leader legitimacy. Hogg and associates presented politically active subjects with descriptions of leaders that included information about their competencies and their attitudes, to determine if followers would give greater credibility to the most competent individual or to one who best embodied the group-defining political attitudes and values. They found that all subjects gave higher ratings to potential leaders who were described as possessing leadership abilities, but subjects who strongly identified with the political group also gave higher ratings to the individuals who espoused the central group values. Hogg and associates found that for followers who were highly identified with their group, a potential leader's possession of normative values, attitudes, and orientations was as important as the possession of more universal leadership competencies. If we interpret these findings in light of Hollander's (1958, 1993) idiosyncrasy credit theory, information about prototypical leader traits provides information about competence, and information about espoused values and conformity to attitudinal norms provides information about trustworthiness.

Meindl (1990) has argued that leadership perceptions are so extensive and influential that they create a "romance of leadership." Not only do we hold prototypes of effective leadership which bias our judgments of leaders, but also our culture's belief in the positive effects of leadership is so ingrained that we attribute many organizational outcomes to the effects of leadership, even when we have no evidence to support such conclusions. For example, Meindl, Ehrlich, and Dukerich (1985) found that the number of leadership stories appearing in business-related newspapers and magazines increased when the stock market fell, and people ostensibly become more concerned about business success. Meindl and Ehrlich (1985) asked business school students to rate the importance of leadership (among other factors) to organizational functioning after reading vignettes describing organizational performance. The more extreme the performance (good or bad), the greater importance was attributed to organizational leadership.

Charisma. The centrality of leadership in our perceptions of group success and the complex relationship of autonomy and dependence between leader and follower may help to explain the basis for "charismatic" leadership. In his seminal work on organizations, Weber (1924/1947) identified the charismatic form of authority in which the leader's legitimacy depended on being chosen to fulfill some spiritual mission and/or being especially gifted in the sense that the leader has "a certain quality of an individual personality by virtue of which he (*sic*) is set apart from ordinary men and treated as endowed with supernatural, superhuman, or at least specifically exceptional powers or qualities" (p. 358).

Several contemporary approaches to leadership emphasize charismatic or exceptional (i.e., transformational) qualities that contribute to a leader's credibility, legitimacy, and influence. Bass (1985) describes transformational leaders as having unusual competencies or expressing an organizational mission in idealized terms. House (1977) examined charismatic historical figures and concluded that they were characterized by the presentation of a compelling goal and the manifestation of extremely high levels of self-confidence.

Chemers, Watson, and May (in press) report that leaders with high “leadership efficacy,” that is, those who describe themselves as having exceptionally good leadership skills and abilities, are given higher ratings on leadership potential by superiors and peers. Here again, we can see the compatibility of these findings with earlier work. Being chosen for an idealized or spiritual mission establishes the leader’s credibility and trustworthiness, and high levels of projected self-confidence provide the basis for inferring competence.

Summary. In summary, the establishment and maintenance of a credible leadership image depends on projecting the characteristics of task-related competence combined with honesty and trustworthiness. Real or imagined behaviors consistent with the leadership prototype enhance the likelihood of such an image being established, and once established, contribute to further judgments that are consistent with and support that image.

Relationship development

The second major element of effective leadership concerns the leader’s ability to establish a relationship with followers that motivates them to bring their full attention, energy, and commitment to the collective endeavor. In a goal-oriented group, the primary momentum for building that relationship is provided by the leader’s *coaching and guidance*. Appropriate task-related mentoring helps the followers to feel empowered in their roles, to grow and develop intellectually as team members and as individuals, and to accomplish assigned tasks effectively. The leader’s basic resource for providing the appropriate type and amount of structure and support is an accurate understanding of the followers’ needs, with respect both to task-relevant skills and to personal or emotional needs. Accurate *attributions and judgments* form the basis for that understanding. Finally, the relationship must be built on *fair and equitable exchanges* between leader and follower.

Coaching and guidance. Effective motivation is based on a balance between an individual’s desire for autonomy and need for structure. Theories of extrinsic motivation (e.g., expectancy theory [Vroom, 1964]) emphasize that individuals must believe that they have the relevant skills and knowledge to achieve performance levels associated with desired rewards. Intrinsic models (e.g., Deci & Ryan, 1980) highlight the importance of autonomy – but autonomy combined with performance feedback. Tasks that exceed a person’s skills and knowledge undermine intrinsic and extrinsic motivation. Thus, strong intrinsic and extrinsic motivation will result from coaching that allows for a level of follower autonomy that is compatible with the follower’s need and desire for structure.

A number of leadership models that focus on follower motivation recognize the importance of coaching that provides sufficient structure to guide the subordinate in accomplishing the task while allowing sufficient autonomy and room for intellectual growth to be intrinsically motivating. Building on the work of earlier theorists (Evans, 1970; Georgopoulos, Mahoney, & Jones, 1957), Robert House (1971; House & Mitchell, 1974) developed path-goal theory which combined an expectancy theory approach to motivation with an emphasis on leader behavior. Path-goal theories argued that leader

behaviors such as initiating structure would increase subordinate motivation by clarifying the path to the goal, thus making goal attainment appear more likely. House added the notion that the effects of a particular set of leader behaviors would be contingent on the nature of the subordinates' tasks and their relative need for structure. Path-goal theory hypothesized that structuring behavior would be most motivating when the subordinate's task was very complex or difficult, but would actually have a detrimental effect on clear or easy tasks where it would be seen as overly close monitoring. However, when a subordinate's task or work environment was boring or aversive, leader's consideration behavior should have a positive effect by buoying up morale and satisfaction.

Empirical research on path-goal theory has yielded mixed findings (Indvik, 1986). One methodological reason for only moderate support involves our earlier discussion of biases in ratings of leader behavior. General positive or negative reactions to a leader may elicit prototype-based perceptions of behavior – which may or may not accurately reflect actual leader behavior. In many of these studies measures of task characteristics, leader behavior, and subordinate motivation are all taken from one source – the subordinate, which is a very weak method. However, moderators of leader behavior effects that may be more important conceptually are those related to the nature of the subordinate's personality.

Although path-goal theorizing often mentions subordinate personality characteristics, few of the empirical studies actually measure such characteristics. In one study that did, Griffin (1981) measured the level of subordinate "growth need strength" (Hackman & Oldham, 1976), reflecting the individual's need for intellectual growth and development on the job. As hypothesized, Griffin found that growth need was a strong moderator of subordinate reactions. Followers high in growth need strength are less in need of structure regardless of task difficulty than are low growth need followers, but are more in need of comforting consideration when the task is routine or highly structured. This study illustrates the importance of considering follower personality, expectations, and needs when predicting the most useful type of coaching.

Although it has not been extensively empirically tested, situational leadership theory (Hersey & Blanchard, 1977) also asserts that the degree of leader involvement in subordinate work activity (i.e., through coaching and direction) should be based on the subordinate's level of task-relevant knowledge and experience as well as on the subordinate's commitment to organizational goals. With increasing subordinate ability and commitment, the leader should gradually move away from direction toward participation and, eventually, delegation.

Bass's (1985, 1998) well-supported transformational leadership theory stresses that outstanding leadership involves providing the subordinate with assignments that are intellectually challenging and foster growth, development, and change. He argues further that the leader must treat the subordinate with "individualized consideration." In other words, it is not enough to be considerate of one's followers in some generic, well-meaning way. It is necessary that the leader approach each subordinate as an individual and provide support, encouragement, or direction that is tailored to that individual's needs and stage of development. In each of these theories of coaching, it is assumed that the leader can accurately assess the follower's needs and abilities. However, a significant question concerns factors that affect a leader's ability to accurately judge a follower's emotional needs or intellectual capabilities.

Attribution and judgment. Leaders must rely on their observations of subordinate behavior and subordinate task performance to form judgments about their relative ability and commitment. Attempts to explain such judgments rely heavily on social psychological theories of attribution (Jones & Davis, 1965; Kelley, 1967; Weiner, Frieze, Kukla, Reed, Rust, & Rosenbaum, 1972).

Green and Mitchell (1979) hypothesized that leaders' explanations for a subordinate's poor performance – a crucial judgment – would be guided by Kelley's (1967) factors of consistency (how frequent was the failure), distinctiveness (was the performance unique to a particular task), and consensus (how did other workers perform). They predicted that when subordinates were seen as failing consistently on a variety of tasks that other workers handled successfully, internal attributions to the subordinate's ability or effort would be more likely than explanations that involved factors outside of the subordinate's control (e.g., a difficult task or lack of organizational support). Such internal attributions were expected to lead to more punitive sanctions such as firing, rather than more benign interventions such as counseling or training. Experimental studies supported these hypotheses (Mitchell & Wood, 1980). Furthermore, Mitchell and Kalb (1982) found that when a subordinate's failure results in outcomes that are more severely negative for the organization, supervisors are more likely to make internal attributions and punitive interventions. The more severe reactions were seen even though the failure or improper procedure is exactly the same as that which results in less severe outcomes and less severe sanctions.

An analysis of leader attribution in group settings (Brown, 1984) explains why this might be so. Brown makes the powerful point that leadership involves "reciprocal causation." When a subordinate performs poorly, it reflects on the leader's performance as well. Poor performance might be the result of the subordinate's lack of ability or motivation, but it might also be the result of inattentive or poor leadership. As the severity of the outcomes increases, the evaluative implications for the leader also increase. Thus, added to the normal tendency to locate the causes of performance internally (Jones & Nisbett, 1971) is the leader's inclination to place blame elsewhere. Defensiveness may be a significant contributor to biased attributions by leaders.

Fiske (1993) notes that in relationships of unequal power, individuals with more power have a tendency to rely on stereotypes in the perception of subordinate partners. In part, this tendency arises from the fact that stereotypes require less effortful information processing for leaders who may be under heavy cognitive demand. A less benevolent explanation is related to the limiting and controlling effects of stereotypes on the less powerful partner. Goodwin and Fiske (1993) report that individuals with strong needs for power or personal dominance are even more likely to use stereotypes in judgments of others.

Another source of potential misjudgment is related to the very control the leader has in the situation. Kipnis, Castell, Gergen, and Mauch (1976) coined the term "the metamorphic effects of power" to describe the phenomenon that superiors who exercise strong methods of influence are more likely to see themselves as the source of the subordinate's compliance and subsequently devalue the subordinate as weak. Further, if the subordinate performs well, the leader is more inclined to take credit for that performance (Kipnis, Schmidt, Price, & Stitt, 1981). Pfeffer, Cialdini, Hanna, and Knopoff (in press) manipu-

lated student leaders' perceptions of the amount of involvement they had in a subordinate's task completion and found that the leaders' ratings of the quality of the task product was significantly correlated with the degree of self-perceived involvement.

In summary, leaders are naturally inclined to take credit for a subordinate's good performance, but likely to place the blame for failure on the subordinate. The more important the task or outcome, the more enhanced the tendency. Judgments lead to sanctions or corrective actions with profound implications for subsequent subordinate motivation, confidence, and commitment.

Fair exchanges. The relationship between the leader and follower is a form of transaction or exchange. The leader expects the subordinate to provide effort to attain the group's goals, and the follower, in turn, expects to be fairly compensated and treated respectfully.

Research on power and influence in leadership relationships (Kipnis & Schmidt, 1982; Podsakoff & Schriesheim, 1985; Ragsin & Sundstrom, 1990; Yukl & Falbe, 1990) provides a clear consensus. The most desirable and effective forms of leader power are referent power – rooted in the leader's attractiveness as a person and role model – and expert power – dependent on the leader's task-relevant knowledge. Similarly, the most well-accepted tactics of influence are rational appeals and consultation, both of which are predicated on the assumption that the subordinate is an intelligent and willing partner in the relationship.

The power of treating the subordinate as a partner is highlighted in the work of Graen and his associates (Graen, 1976; Graen & Cashman, 1975; Graen & Scandura, 1987). Graen's vertical dyadic linkage model concerns the manner in which the leader and a subordinate negotiate the roles each will occupy in the relationship. After an initial period of acquaintance, the leader forms a judgment of the subordinate that leads toward a relationship in which the subordinate is treated either as a valued partner or a "hired hand." In high quality exchanges (i.e., partnerships), subordinates are given more interesting assignments and greater latitude in their accomplishment with the result that the subordinate becomes more committed to the relationship, the work, and the organization.

Summary. Relationship development is a critical element in effective leadership. In good relationships, followers become willing and committed partners, placing team and organizational success above their own interests. Feelings of partnership are dependent on the follower being treated with fairness and respect which entails providing an atmosphere of coaching and development for growth based on an accurate understanding of the follower's capabilities, personal style, and emotional needs and resources.

Resource deployment

The third important element of leadership is resource deployment. The potential effort, energy, and knowledge of a group of motivated followers represent the resource base for task accomplishment as do the skills, knowledge, and energy of the leader. These resources

must be deployed toward goal attainment, and that can happen in relatively more or less effective ways.

Self-deployment. The capabilities of effective leadership that we have described in the previous sections call on the leader to make the best possible use of his or her own resources. Good leaders must project an image of competence and trustworthiness. They must treat followers with sensitivity and respect, while challenging them to contribute to group goals. Finally, leaders must be astute observers of the group's environment and adjust internal maintenance processes to achieve successful external adaptation. What factors determine a leader's success in meeting this daunting set of demands?

Recent research suggests that confidence in one's ability to lead is a critical factor in effective self-deployment. Bennis and Nanus's (1985) popular book on leadership was based on interviews with 60 private sector and 30 public sector chief executive officers in outstandingly successful organizations. They concluded that these leaders were characterized by very high levels of self-confidence in their ability to lead and optimism about the results of their actions.

In a more controlled research approach, Chemers and his associates have reported that leaders high in leadership efficacy (i.e., the belief that one possesses the specific skills and general abilities necessary for leadership) are seen as more capable of leadership by peers, superiors, and subordinates and lead teams that perform more effectively. Chemers, Watson, and May (in press) obtained self-reports of leadership efficacy and optimism from a large group of ROTC cadets and later obtained ratings of the cadets' leadership performance from military science instructors at their universities and from peers, superiors, and evaluators of a leadership simulation at a summer Advanced Leadership Camp run by the U.S. Army. Leaders high in self-efficacy received higher ratings from every evaluative source than did less confident leaders.

In a study of men's and women's college basketball teams, Watson, Chemers, and Preiser (in press) measured the leadership efficacy of the teams' on-court leaders (e.g., team captains) and the collective performance efficacy of the entire team prior to the beginning of the season and then related those perceptions to each team's win and loss record for the season. After controlling for talent factors, such as previous season's record, number of returning players and starters, and coaches' overall assessment of talent, Watson et al. found leadership efficacy to be a strong and significant predictor of collective efficacy which, in turn, was a significant and strong predictor of team performance.

In these studies, leadership efficacy was treated as a dispositional variable (i.e., a relatively stable aspect of individual self-concept), but there is evidence that confidence is also affected by a leader's sense of fit with the environment. Eagley, Makhijani, and Klonsky (1992) report that some tasks are seen as more or less "congenial" or comfortable for male or female leaders. Regardless of sex, leaders who were in congenial tasks were more likely to act forcefully. Chemers, Ayman, Akimoto, and Sorod (1992) described a series of studies that indicated that leaders whose leadership style (i.e., task vs. relationship motivation) was matched to the degree of structure in the situation (according to the contingency model predictions [Fiedler, 1967; Fiedler & Chemers, 1984]) were more confident and positive about themselves and their groups than were mismatched leaders.

The ways in which one's mental state might influence the successful deployment of personal resources is illuminated by cognitive resource theory (CRT) (Fiedler & Garcia, 1987). Based on an extensive empirical base, CRT indicates that the usefulness of a leader's cognitive resources, that is, intelligence and experience-based knowledge, is drastically affected by the degree of stress the leader is experiencing. Leaders who are under heightened stress (e.g., from bosses, tasks, or other factors) become unable to use their intelligence in successful problem solving and decision making. They essentially become "nattering fools" (Fiedler, 1993). However, if experience has provided the leader with good knowledge on how to proceed (not requiring complex thought analysis), performance under stress can be excellent. The studies described above suggest that leadership confidence is a very important variable in self-deployment, and that confidence can result from either dispositional characteristics or from the fit between leadership style and the task environment.

The second aspect of resource deployment concerns the effective utilization of the followers' effort, knowledge, and commitment.

Team deployment. The idea that some leadership styles or orientations are more suited to particular task environments is central to theorizing about how leaders maximize the fit between internal processes and environmental demands. One of the major breakthroughs in the study of leadership effectiveness occurred during the decade between 1965 and 1975 and was the recognition that different leadership situations might influence the relative effectiveness of various leadership styles or decision-making strategies.

In 1967, Fiedler published *A Theory of Leadership Effectiveness*, which brought together an extensive set of research findings in the presentation of a theoretical approach labeled the contingency model. The model proposed that leaders approach group task situations with a strong orientation to maximize either interpersonal success or task accomplishment. Task-oriented leaders were generally more sensitive to task-related information and most likely to employ directive and structuring behavior. Relationship-oriented leaders were more attentive to interpersonal and morale-related issues and more likely to use participative decision making and considerate behavior.

Most remarkable was that Fiedler's data indicated that each of these leadership orientations was differentially effective based on the degree of predictability and control that the leadership situation provided to the leader. Predictability and control were determined by (1) the willingness of the followers to accept the leader's influence, (2) the degree of structure and clarity in the task, and (3) the amount of formal authority that the organization bestowed on the leader. These three variables were combined to yield a continuum of "situational control."

Task-oriented leaders were found to function most effectively in situations of very high or very low control. Both of these extremes make the use of directive strategies effective. In high control, the leader knows how to lead and the followers are prepared to follow. In low control, a firm hand on the rudder is necessary to keep the group from foundering. The relationship-oriented orientation with its use of subtler and more responsive tactics is better suited to the ambiguous and relatively less predictable middle zone characterized by an unstructured task or uncertain relationships. Although the subject of considerable controversy during the 1970s with respect to the validity of its findings, the

contingency model has been strongly supported by two meta-analyses done in the 1980s (Peters, Hartke, & Pohlmann, 1983; Strube & Garcia, 1981).

Approaching the problem from a different direction, but arriving at a similar conclusion, Vroom and his associates (Vroom & Yetton, 1973; Vroom & Jago, 1974) developed a contingency theory of small-group decision making called normative decision theory. Based on work in the decision-making and problem-solving literature (Maier, 1963), Vroom and Yetton deduced that the two crucial factors in decision making were how much information the leader had about the decision and how much support the leader was likely to have from followers in the implementation of any decision made. One can see that these two factors mirror the degree of clarity and structure in the group task and follower willingness to accept influence, which are the central variables in Fiedler's contingency model.

Normative decision theory identifies a continuum of leader decision styles that range from autocratic (the leader makes the decision alone) through consultative (the leader seeks advice from subordinates) to democratic or participative (the group makes the decision). When the leader has both the knowledge and structure to make a good decision and the expectation of willing support from followers in implementation, autocratic decision making is fastest and most efficient. As the leader's control over the situation deteriorates due to unclear information or a lack of support, more consultative or participative decision styles are likely to be more effective, because follower participation increases the likelihood that more information will be processed and that more support will develop. Although often seen as contradictory, the contingency model and normative decision theory are really complementary approaches. Each predict that more directive leadership approaches will be more effective in clear and predictable situations, and more participative approaches will be most successful in complex and ambiguous situations.

Summary. Successful leadership requires the effective deployment of internal resources to external demands. When a group is confronted with a complex and unpredictable environment, it will function most effectively if it employs flexible processes that involve many group members and much information in the decision. When situations are more structured and predictable, more regimented, time-efficient strategies can be successful. Good leaders must be able to recognize these features of the external environment to be able to adapt group processes. They must also have developed the kind of working relationships with followers that allow a group to function smoothly in various modes. A sense of personal efficacy leading to a calm and non-defensive posture seems to be the link between personal and team deployment.

Potential Moderators of Leadership: Culture and Gender

Most of the research that has been reviewed in this chapter was done in the United States or Western Europe and measured the behavior or performance primarily of White males. A very reasonable question is how much of what is concluded here remains valid if we consider leadership by women or people of other cultures.

Cultural factors

There is a reasonable, but not extensive literature on leadership in non-Western cultures. However, there is also a fairly well-developed literature on cultural differences in social processes, which while not directly about leadership, are quite relevant and applicable to leadership (also see Carnevale & Leung, this volume, chapter 20).

Cultural factors in social processes. One of the earliest and most important areas of social psychological consideration was the effect of values on social behavior (Znaniecki, 1918) – an interest also central to the study of cultural differences (Triandis & Brislin, 1980). A considerable body of research in organizational psychology has addressed the effects of value differences on work-related behavior in different societies.

Geert Hofstede (1980, 1984) has published some of the most influential work on values as related to organizational functioning. Hofstede (1980) adapted a number of value measures used in cross-cultural research on organizations into a comprehensive scale, which he then administered to a very large sample ($n > 50,000$) of middle managers from over 40 countries. Factor analyses resulted in four factors:

- 1 *Power distance*, referring to the degree of status differentiation accepted in social relations;
- 2 *Uncertainty avoidance*, reflecting people's comfort with risk and ambiguity in daily functioning;
- 3 *Individualism–Collectivism*, indicating the degree to which individuals in a society value individual, personal accomplishment as opposed to ingroup advancement and loyalty; and
- 4 *Masculinity–Femininity*, measuring the amount that members of the society valued “masculine” goals, such as achievement, competition, and material success as compared to “feminine” goals, such as nurture, concern for harmony, and quality of life.

Hofstede argued that cultural values help to determine organizational practices – for example, the extent to which leadership in goal-setting processes was relatively autocratic (e.g., France) or participative (e.g., Germany) as a result of differences in power distance; or the extent to which an organization had extensive sets of bureaucratic controls (e.g., Japan) or looser and more flexible systems (e.g., United States), reflecting different levels of uncertainty avoidance.

A number of social psychologists have zeroed in on the individualism–collectivism dimension as relevant to a range of social psychological processes (Markus & Kitayama, 1991; Triandis, 1990). Markus and Kitayama (1991) analyzed differences in construal of the self in individualistic societies (the independent self) and in collectivist societies (the interdependent self) – in terms of self-related cognitions, emotions, and motivation. Independents are most attentive to self-relevant information, are most emotionally affected by personal issues and are most motivated by outcomes related to individual goals and achievements. Interdependents, on the other hand, see themselves as deeply embedded

in a social context with the result that perception, thought, emotion, and motivation are most attuned to social roles and the achievement of harmonious relations and advancement of the group. It is reasonable to expect that differences in self-orientation like these might be related to both the image of what a good leader is and the expectations for what a fair, sensitive, and rewarding leader–follower relationship would involve.

In a cross-cultural taxonomy of relational orientations, Fiske (1991) details four common patterns in the exchange of valued resources. *Community sharing* refers to the pattern in which each group member gets what is needed, regardless of the level of their own contribution, and is based on generosity, concern for others, and avoidance of loneliness and isolation. *Authority ranking* involves unequal allocation based on status and power and entails the respect, deference, and obedience to superiors common in high power distance societies. *Equality matching* emphasizes social justice, reciprocity, and equal sharing of rewards, with the attendant diminishment of status differences. *Market pricing* means that resources are distributed based on “equity” or “fairness,” implying that each person should be rewarded on the basis of merit and every individual seeks his or her own level. One might hypothesize that the nature of the leader–follower exchange and the type of behavior that would personify a good leader would vary considerably under these different systems.

Early (1997) integrates Hofstede’s (1980) values difference and Fiske’s (1991) resource exchange approaches in a model based on “face, harmony, and social structure.” Early argues that the primary agenda in human social life is the determination of self-identity and position in a social structure. The two forms of face – one related to moral worthiness and the other to social prestige, status, and honor – are negotiated according to the particular values, norms, and exchange relationships in any social group. These negotiations ultimately are a major determinant of the form and functioning of organizations. For example, in collectivist societies, where trust between ingroup members is the basis of security and survival, moral worthiness is the most important form of face. In a society with strong status differentiation or authority matching exchanges, social prestige and standing are more important. When people in each society interact, their social interplay is a subtle attempt to establish, enhance, or protect their own face in a way that doesn’t endanger future important interactions with the other party. For example, an American manager might seek to increase his social face by claiming responsibility for a successful project completion, but must be mindful not to reduce the face of other team members who also contributed to this project’s success and might do so again in the future.

Cultural factors in leadership processes. The question of the cultural specificity of leadership processes is a complex and subtle one. The answer depends on the way in which the question is framed and on the level at which the analysis is aimed. Research on cultural factors in leadership behavior provides a case in point.

In 1969, Chemers reported that behavioral ratings of leaders by Iranian managers resulted in an unusual factor structure. Instead of structuring (task-focused) behavior and consideration (morale-focused) behavior appearing as independent factors, as they almost always do in the United States, the two factors collapsed into one general factor that was strongly related to subordinate ratings of satisfaction with the leader. In 1983, Ayman

and Chemers reported another similar factor structure in ratings of managerial behavior by Iranian subordinates. In the 1983 study, two new items that were added to the leader behavior scales (“my leader is a good leader” and “my leader is like a kind father to me”) loaded heavily on this common factor, which again was strongly related to subordinate satisfaction with the leader. Ayman and Chemers concluded that this factor, labeled *Benevolent Paternalism*, represented the Iranian prototype of an effective leader. Sinha (1990) has reported similar ratings of leaders in India.

Based on these ratings, one might conclude that effective Iranian (or Indian) leaders behave differently (based on cultural values) than do American leaders. The problem with that conclusion is that although the leaders rated in the Ayman and Chemers (1983) study were Iranians, the leaders in the Chemers (1969) study were actually American leaders rated by Iranian followers. The more reasonable conclusion is that the differences in factor structure were more likely to have been caused by leadership prototypes held by the Iranian raters, rather than in the actual behavior of the leaders.

An extensive 25-year research program undertaken by Japanese psychologist, Jyuji Misumi (Misumi & Peterson, 1985) sheds more light on this question. Misumi's research on the performance–maintenance theory of leadership (Misumi, 1984; Misumi & Peterson, 1985; Misumi & Shirakashi, 1966; Misumi & Tasaki, 1976; Tasaki & Misumi, 1976) found that Japanese leaders who combined performance behavior (i.e., structuring, direction, and productivity emphasis) with maintenance behavior (i.e., support, consideration, and friendship) were more effective than those who emphasized only one of the behaviors. The effect was found both in field studies in which subordinates rated their managers and in laboratory experiments where trained leaders controlled the behavior they exhibited. The research by Misumi and by Chemers and Ayman leads to two questions. Are structuring and consideration behaviors universal categories, and why are they independent in some cultures and combined in others?

Smith, Misumi, Tayeb, Peterson, and Bond (1989) administered an adapted Misumi's performance–maintenance survey to workers in the United States, Great Britain, Hong Kong, and Japan. In addition to general ratings of performance and maintenance, they added a number of very concrete and specific behaviors. They found that while the two factors were found in all four samples – perhaps reflecting the fact that leadership always involves a task and people – the specific behaviors that loaded on each factor were different in the different countries. The differences reflected the value differences already discussed. For example, American and British workers thought leaders were being considerate when they discussed work-related performance problems directly with them, while the Asian subordinates preferred that their superiors take an indirect approach of talking to their coworkers to protect against personal embarrassment (i.e., loss of face). Thus, at a general level, the two factors do seem to be widespread across culture, while the specific behaviors relevant to each factor are culturally specific.

As to why effective leaders in Iran, India, and Japan might be capable of combining structuring and considerate behavior while U.S. and other Western leaders seem to emphasize one or the other may also be dependent on values and expectations. Chemers (1997, 1998) argues that in individualistic and relatively low power distance societies (such as the United States, U.K., Australia, Israel), subordinates' need for growth and autonomy requires that considerate leadership behavior provide opportunities for subor-

dinate participation and development. Since high levels of directiveness and high levels of participation are contradictory, leadership in individualistic societies is likely to be more differentiated than in collectivist, high power distance cultures where a good leader (like a good father) can be both kind and directive.

Recently, Bass (1997) reported that studies of transformational leadership in several countries revealed that outstanding leadership was universal. Leaders associated with outstanding levels of task performance were rated highly on the behavioral factors of his transformational leadership model, that is, inspirational influence, idealized vision, individualized consideration, and intellectual challenge. What we don't know is whether outstanding leaders around the world all engage in the same behaviors, or if, no matter what the culture, good leaders are perceived as competent, trustworthy, and very concerned about their followers, even though the specific behaviors might be quite different.

Gender factors

Like culture, an analysis of gender differences in leadership requires considerable subtlety of analysis. Stereotypes have long existed about differences in the suitability of men and women for leadership roles. Bass, Krusell, and Alexander (1971) reported that in a survey of 176 male managers' attitudes toward women at work, the men thought that women lacked career orientation, dependability, and emotional stability. A series of studies on stereotypes of women in leadership reveal the remarkable staying power of these views. Schein (1973) asked male managers to describe the characteristics of men, women, and managers. The descriptions of men had a great deal in common with the descriptions of managers, while women's descriptions showed little overlap. More than 15 years after the Schein study, Heilman, Block, Martell, and Simon (1989) found that the stereotypes had changed little. Men were still more similar than women to managers and to "successful managers."

Is there any substance to these stereotypes? Do women have different leadership styles or capacities that make them less (or more) effective in leadership roles? After reviewing the available literature on the topic, Bass (1981) concluded that "the preponderance of the available evidence is that no consistently clear pattern of differences can be discerned in supervisory style of female as compared to male leaders" (p. 499). A very careful meta-analysis of research on gender differences in leader behavior (Eagly & Johnson, 1990) found very few differences between male and female leaders in terms of supervisory behavior or leadership style, and found only small differences in self-reported decision style. In a similar meta-analysis of research on the evaluation of male and female leaders, Eagly, Makhijani, and Klonsky (1992) found overall differences to be very slight and moderated by a number of factors, such as the nature of the followers and their attitudes toward women in leadership roles. Eagly et al. (1992) asked college students to rate the "congeniality" of various leadership roles for men and women, that is, how comfortable they thought a man or woman would be in the role. When they applied the congeniality analysis to their meta-analytic data, they found that all leaders – men and women – were described as more directive and forceful and were evaluated more positively when in a congenial role.

The effects of stereotypes and negative expectations for women leaders are not benign. Lord and Maher (1991) argue that the decision about who is a leader and subsequent attributions that flow from that judgment are heavily influenced by the leadership prototype held by the observer. If the prototype for leadership is exclusively masculine, women will have a hard time being perceived as a leader or being rated as an effective leader. In fact, another meta-analysis on leadership emergence (Eagly & Karau, 1991) does indicate that women are less likely to emerge as leaders in male-dominated tasks or organizations.

Belle Rose Ragins has conducted a series of studies examining the relationship of authority to women's leadership. In an exhaustive review of gender and power in organizations, Ragins and Sundstrom (1989) concluded that women have considerably more barriers than men in accumulating power in organizations, for a variety of reasons, including negative stereotypes and expectations. However, when men and women are matched for organizational level, no differences are found: (1) in the use of various forms of power (Ragins, 1989); (2) in subordinates' perceptions of the availability of various types of power (Ragins & Sundstrom, 1990); or (3) in the evaluations of men and women leaders (Ragins, 1991).

The conclusions in the area of gender and leadership are quite clear. Differences between men and women in leadership style or performance are so small as to be insignificant, but the negative stereotypes and expectations that surround women's leadership, while in the process of change, remain a serious impediment to the recognition of women's capabilities for success in leadership roles.

Some Conclusions

The leadership literature is far more coherent than it appears at first glance. Effective leaders project an image of competency and trustworthiness. The trustworthiness encourages followers to perceive the validity of the mission, and the competence creates the expectation that success is possible. Leadership involves a relationship in which leaders motivate followers to give their best, by providing challenges and support for growth and by rewarding people fairly – tangibly or psychologically – for their efforts. Finally, good leaders make effective use of the material and psychological resources of themselves and their teams by choosing strategies for task accomplishment that are adapted to the social and task environment.

A leader's ability to exhibit the capacities described here is greatly influenced by self-confidence. Leadership efficacy plays a role in the setting of high goals and expectations for self and followers and in creating a belief in the ability to achieve those goals. Confidence and positive expectations lead to calm and careful judgment, high effort, and perseverance in the face of difficulty. These attitudes provide the psychological basis for accomplishing the key elements of effective leadership, that is, image management, relationship development, and resource deployment.

In many ways, leadership is a universal process. Good leaders in every culture and at every time are wise and capable, sensitive to the needs and desires of followers, and fair.

These traits are manifested somewhat differently in response to cultural values and expectations. Gender differences, on the other hand, are even less significant in determining leadership effectiveness – being more the result of false stereotypes and biased expectations than the result of true differences in capacity.

How real are the effects of leadership? Is leadership effectiveness nothing more than an overrated social construction (Calder, 1977)? The evidence is quite clear that leadership has a real and significant effect on team and organizational outcomes. Some leaders are indeed more successful than others. However, the particular definition of success and the attributions that surround specific individuals in the leadership role are heavily influenced by expectations, prototypes, and social constructions. Like all social psychological phenomena, leadership researchers benefit from a combination of positivist and constructionist perspectives.

In fact, one promising area of future research might involve the melding of positivist and constructionist approaches in the study of leadership and organizational effectiveness. Given the importance of leader and follower confidence and optimism in team performance, an intriguing question concerns the tradeoff between accurate assessment of environmental contingencies versus perceptions and attributions that give rise to positive interpretations with resultant boosts to confidence.

When we move beyond the relationship between a single leader and single subordinate, the leadership context becomes more complex. Future research is likely to focus more on teams within organizations, and on organizations within society. Work relating leadership to intergroup relations (e.g., Hogg et al., 1998), power relationships (e.g., Fiske, 1993), and the broader cultural context (Chemers, 1997) offer potentially interesting new avenues of investigation.

What must be at the root of all of these approaches is the clear recognition that leadership and teamwork are social phenomena, and research guided by social psychological theory is most likely to allow for its best understanding.

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CHAPTER SEVENTEEN

Social Categorization, Social Identification, and Rejection of Deviant Group Members

**José M. Marques, Dominic Abrams, Dario Páez,
and Michael A. Hogg**

Why do people in groups often react so strongly against fellow group members who are deviant – often derogating and rejecting ingroup members significantly more strongly than outgroup members for behaving in precisely the same way? In this chapter, we analyze why group members reject ingroup deviants – rather than why people may deviate or become deviant in the first place. The focus is on group members' perceptions and evaluations of individuals who deviate from ingroup or outgroup norms, rather than on processes of reputation management that may be associated with people's adoption of deviant behaviors and identities (e.g., Archer, 1985; Emler, 1990; Emler & Reicher, 1995), or on societal labeling processes that may produce deviant careers (e.g., Becker, 1963), or on processes that may cause people to acquire marginal identities (e.g., Breakwell, 1986).

Deviance is potentially a huge topic. A key feature of deviance is that people who are different; who depart from societal, group, or even individual standards of “natural” behavior are considered to be not just different but bad. They are not merely behaving differently to other people in a particular context, but are often thought to have intrinsically different underlying attributes and to be bad and often evil and disruptive or pathological people (for example the popular, and clinical psychological, characterization of delinquency as pathology – see Emler, 1990, for discussion). There is an attributional logic that tends to attribute difference to underlying individual essences (e.g., Medin & Ortony, 1989) or, through the fundamental attribution error or the correspondence bias

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(e.g., Gilbert & Malone, 1995; Ross, 1977), to stable personality attributes. The perception of someone as being a deviant discredits and devalues them, and reduces their persuasive potential. In this respect, deviance may be a perception that protects the rest of us from having to confront ourselves, and possibly change our attitudes, behaviors, and even sense of who we are – our identity. The subjective transformation of difference into deviance may protect against self-conceptual uncertainty (see Hogg, in press a).

Yet, without deviance perhaps social change is not possible – much like Moscovici's argument that without minorities social change is difficult to envisage (e.g., Moscovici, 1976; also Mugny, 1982). Indeed, another dimension to the study of deviance is the study of deviant *groups*, which invokes the logic of intergroup relations (e.g., Brewer & Brown, 1998) and minority influence (see Martin & Hewstone, this volume, chapter 9). Here, the dynamic is one in which groups that dissent from the majority are constructed as deviant, and in turn those groups struggle to shrug off the label or use the label to their advantage. In this case, the study of marginalization of ethnic or cultural groups in multi-ethnic or multicultural societies may fall within the purview of the study of deviance (cf., Prentice & Miller, 1999; also see Hornsey & Hogg, in press).

Clearly, social categorization is centrally involved in almost all forms of deviance. Deviance is a matter of individuals or groups being categorized, or categorizing themselves, as different from the “rest of us” – the majority. In this chapter we focus on the role of social categorization in deviance. We also restrict ourselves to understanding how individuals are perceived to deviate from the group – the focus is on the perception of individual deviants in a group or an intergroup context. We adopt a particular type of social categorization analysis, broadly framed by the social identity perspective. More specifically, our analysis is theoretically oriented by research on the so-called *black sheep effect* (Marques, 1990; Marques & Páez, 1994; Marques, Yzerbyt, & Leyens, 1988), and more recent research on what we have called *subjective group dynamics* (Abrams, Marques, Bown, & Henson, in press; Marques, Abrams, Páez, & Taboada, 1999; Marques, Páez, & Abrams, 1998).

The term “black sheep effect” was originally coined to describe the way in which people evaluatively upgrade likable ingroup members and downgrade unlikable ingroup members, relative to comparable outgroup members. Marques, Yzerbyt, and Leyens (1988) suggested that this effect reflected a form of ingroup favoritism. Likable ingroup members contribute positively to the overall evaluative image of the ingroup, and thus their evaluation relative to outgroup members reflects the usual straightforward ingroup bias effect – they are liked more than a comparable outgroup member (e.g., Hogg & Abrams, 1988). Unlikable ingroup members are also ingroup members and therefore their evaluation should also reflect straightforward ingroup bias (they should be liked more than outgroup members). However, because they are unlikable, they contribute negatively to the overall image of the ingroup. Thus, ingroup favoritism takes a paradoxical form in which group-level bias in favor of the ingroup is reflected in evaluative rejection of the specific “deviant” relative to a comparable outgroup member.

The model of subjective group dynamics described in this chapter develops from this idea. We define subjective group dynamics as, a process by which people maximize and sustain descriptive intergroup differentiation while *simultaneously* maximizing and sus-

taining the relative validity of prescriptive ingroup norms through intragroup differentiation (Abrams et al., in press). The model proposes that reactions to deviants involve at least two distinct processes. First, group members need to perceive the *extent* of deviation at the intragroup level. However, merely noticing that a group member has deviated is not sufficient to provoke negative evaluations and judgments. The critical issue is how the deviation affects the subjective validity of the ingroup norm. Consequently, group members also assess the meaning of the deviance in relation to that norm (Abrams et al., in press; Marques et al., Expt. 3, 1998). Specifically, evidence that is convergent with ingroup norms may increase these norms' subjective validity, and evidence that is divergent decreases the norm's validity. Therefore, people should dislike ingroup members who diverge from ingroup norms even more than they dislike outgroup members. Concomitantly, at least in certain conditions, individuals might actually like outgroup members whose relative support for ingroup norms boosts the relative validity of these norms.

The Role of Group Norms in Judgments and Behavior

Norms can be defined as propositions that prescribe beliefs, perceptions, and behaviors of group members (e.g., Miller & Prentice, 1996; Turner, 1991). The sociologist C. H. Cooley vividly described the cognitive-emotional experience of the anticipation of one's own deviance from norms, as a sense "of the pains and inconveniences of non-conformity [. . .] the source of the pain appearing to be a vague sense of deprecatory curiosity which one imagines that he will excite. His social self-feeling is hurt by an unfavourable view of himself that he attributes to others" (Cooley, 1922/1992, pp. 293–294). Concomitantly, and to use the words of another sociologist, Georg Simmel, deviant members generate "a kind of [. . .] hostility whose intensification is grounded in a feeling of belonging together, of unity, which by no means always means similarity [. . .]. This hatred is directed against the member of the group, not for personal motives, but because the member represents a danger to the preservation of the group" (Simmel, 1858/1955, pp. 48–49).

The insights of classical sociologists have been widely confirmed empirically by social psychological research on small-group behavior. This research shows that commitment to group norms allows members to gain a subjectively valid view of relevant issues, and allows members to confirm each other's expectations (e.g. Asch, 1952; Boyanowsky & Allen, 1973; Burnstein & Vinokur, 1975; Cialdini, Kallgreen & Reno, 1991; Forsyth, 1990; Jones & Gerard, 1967; Kelley & Volkart, 1952; Levine & Thompson, 1996; Sherif, 1966; Turner, 1995). When deviance emerges in a group, people first attempt to persuade the deviants to join the group's mainstream, they then show hostility toward deviants who consistently resist these persuasive efforts, and, ultimately, they reject them, or redefine the group's boundaries (cf. Cartwright & Zander, 1968; Festinger, 1950; Levine, 1989). The traditional "group dynamics" literature on deviance in small interactive groups is enormous, so we will limit ourselves here to describing just four illustrative studies.

Reactions to Deviance in Small Groups

In his well-known “Johnny Rocco” experiment, Schachter (1961) had university students participate in discussion clubs. Three confederates in the group were instructed to fully and consistently agree (“modal”), to disagree (“deviant”), or to initially disagree and then increasingly agree (“slider”), with the majority. After the discussion, group members evaluated each other, and assigned each other to roles that varied in prestige within the group. Among other things, Schachter observed that, as it became evident that the deviant confederate would not alter his position, participants ceased to communicate with him, rejected him in terms of sociometric choices, and appointed him to the less prestigious positions in the group. This effect was accentuated as a function of increasing direct relevance of the discussion topic and of participants’ increasing involvement with the issue (Schachter, 1961).

In a more recent study, Earle (1986) had groups of four participants discuss whether psychology undergraduates should participate as research subjects at the university. According to conditions, participants were informed that the discussion was aimed (a) at helping each person form a personal opinion (individual goal), or (b) at helping the group reach a consensual conclusion (group goal). A deviant confederate was instructed to systematically diverge from the majority’s opinion. Participants then anonymously indicated to what extent they wished each member to remain in the group for an upcoming discussion. The confederate was more strongly rejected in the group goal than in the individual goal condition.

To explain this finding, Earle (1986) argued that individual goals lead participants to reject deviants less, because deviants provide divergent views and associated informational diversity that might be useful in discussion. However, where there is a group goal, deviant opinions obstruct the process of reaching consensus – a state of affairs that would be particularly threatening when the group goal involves an important value (see also Goethals & Nelson, 1973; Wiggins, Dill, & Schwartz, 1965). The fact that strong group goals may engender pressure toward compliance, and concomitant censure of deviants, may have further support from research on groupthink (e.g., Janis, 1982; also see Hogg & Hains, 1998; Turner, Pratkanis, Probasco, & Leve, 1992). Highly cohesive and group task-oriented groups tend to show a number of suboptimal decision-making symptoms, including intolerance of deviant ingroup opinions, censorship and self-censorship of deviants, and ultimately rejection of deviants.

There is a parallel between the implications of deviance for the subjective validity of group members’ beliefs, and its implications for group task achievement. Jones and DeCharms (1957) had participants perform a task in groups of five or six, among whom there was a confederate who was instructed to systematically display lack of interest in task achievement. According to condition, participants believed they would be rewarded for their work either (a) on the basis of collective performance, or (b) on the basis of individual performances. After completing the task, participants evaluated the confederate more negatively in the collective than in the individual condition. In a similar study, Berkowitz and Howard (1959) had groups of four or five participants appraise an organizational conflict. Again, participants believed they would be rewarded for their success,

either (a) on the basis of the group's performance, or (b) on the basis of their individual performance. During the course of the group discussion, participants learned that one member disagreed with the course of the majority. Results showed that participants rejected the disagreeing member more as a prospective coworker, in the collective than in the individual reward condition.

Taken together, these experiments quite convincingly show that people derogate fellow ingroup members who do not demonstrate normative solidarity with the group, either in terms of valued norms, or in terms of group achievement – see Levine (1989) and Marques and Páez (1994) for more detailed reviews. The large majority of social psychological research on reactions to ingroup deviance has, however, been conducted from the perspective of small-group research (e.g., Cartwright & Zander, 1968; Levine & Moreland, 1994; Levine & Thompson, 1996); a perspective that tends to emphasize the role of group members' interactive interdependence in how they react to deviance. Commentators believe that this perspective may make it difficult to fully understand deviance processes in large-scale social categories where interpersonal interdependence is less salient (e.g., Allport, 1924; Brown, 1988; Hogg, 1992, 1996; Jones & Gerard, 1967; Shaw, 1976; Wilder & Simon, 1998).

Perspectives that treat groups as social categories tend to downplay the importance of face-to-face interaction and behavioral interdependence, and instead place a greater emphasis on collective self-definition irrespective of group size or other details of specific groups (see Hogg, in press b; Hogg & Williams, in press; also Hogg, this volume, chapter 3). Among these perspectives it is the social identity perspective that has probably had most impact in recent times on mainstream social psychology, especially the social psychology of groups (see Abrams & Hogg, 1998; Hogg & Abrams, 1999; Moreland, Hogg, & Hains, 1994).

Research framed by the social identity tradition, and inspired by self-categorization theory and social identity theory, places greater emphasis and importance on collective self-conception as a group member than on perceived interdependence and face-to-face interaction – indeed the latter may actually be contingent on the former (cf. Billig, 1976; Hogg, 1992; Hogg & Abrams, 1988; Tajfel, 1978; also Hogg, this volume, chapter 3). In this chapter we propose that a parallel may exist between “actual,” or face-to-face, interdependence, and representational interdependence among ingroup members based on those members' social identification with the group.

Social Identification and Derogation of Ingroup Deviants

Social identity theory (Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) have systematically described the cognitive, value, and emotional concomitants of group judgment and behavior (see also Hogg, 1992; Hogg & Abrams, 1988; Turner & Bourhis, 1996; Hogg, this volume, chapter 3). In contrast to the small-group dynamics approach, these theories focus on what Prentice, Miller, and Lightdale (1994) have called *common-identity groups*; that is, groups in which the primary goal for members is to bolster a positive

and distinctive social identity. Such groups include minimal groups and large social categories.

The core assumption is that individuals define their social self-concept (social identity) by categorizing themselves and others as members of social groups (Tajfel & Turner, 1979; Turner, 1975). Self-categorization as a group member leads people to develop a shared group-level fate (Tajfel, 1978; Turner & Bourhis, 1996), and regulates whether people conform, and expect others to conform, to group norms (e.g., Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990; Hogg, 1996; Jetten, Spears, & Manstead, 1996; Marques et al., 1998; White, Terry, & Hogg, 1994). Group solidarity not only involves normative action and expectations, but also mutual positive regard among group members *as group members* – a process of liking for others based on liking for the group and for oneself (Hogg, 1992; Hogg, Cooper-Shaw, & Holzworth, 1993; Hogg & Hains, 1996; Hogg, Hardie, & Reynolds, 1995). In this case, social identity can be considered a unique and ultimate *subjective group rationale* (Marques & Páez, 1994; Marques, Páez, & Abrams, 1998). When this rationale is salient, people become more normative, and, of course, more sensitive to and vigilant for ingroup deviance. Negative value ascribed to deviant ingroup members would reflect badly upon the ingroup as a whole, and thus badly on self as a group member.

Self-stereotyping and the metacontrast principle

According to self-categorization theory, social categorization is context dependent. The social categorizations that people use to make sense of a particular social context come into play as a result of an interplay between stimulus configurations present in those settings and the categories that are subjectively available (e.g. Oakes, Haslam, & Turner, 1994). Where an available category “fits” the stimulus configuration, it becomes the cognitively salient basis for social categorization of self and others in that context. Social categorization then perceptually accentuates differences between members of different groups and similarities among members of the same group (Doise, 1978; Tajfel, 1969, 1978; Tajfel & Wilkes, 1963). Group behavior ensues from perception of self (and others) as depersonalized instances of a group, whose salient features are shared by all members of the group. Turner (1984) reformulated this idea in terms of the *self-stereotyping hypothesis* – he argued that “self-stereotyping produces [. . .] the perceptual interchangeability or perceptual identity of oneself and others in the same group on relevant dimensions. It is this cognitive redefinition of the self – from unique attributes and individual differences to shared social category memberships and associated stereotypes – that mediates group behaviours” (Turner, 1984, p. 528). Thus, group behavior occurs when people cognitively structure a social context in a way that maximizes the clarity or distinctiveness of intergroup boundaries. This process has been formally described in terms of the *metacontrast principle* (e.g., Turner et al., 1987).

The metacontrast principle states that social categories organize themselves around the cognitive-perceptual maximization of the ratio of intergroup differences to intragroup differences. It defines how people perceive that differences between members of contrasting groups are larger than differences among members of the same group, in a given com-

parative context (e.g., Hogg & Abrams, 1988; Hogg & McGarty, 1990; Oakes, Haslam, & Turner, 1994; Oakes & Turner, 1990; Turner et al., 1987). The metacontrast process serves three important functions. First, it transforms social comparative diversity into a more limited set of prototypes – fuzzy sets of attributes that capture intragroup similarities and intergroup distinctiveness (e.g., Hogg, 1992, 1996; Turner et al., 1987). People are able to evaluate group members in terms of how well they actually match the relevant ingroup or outgroup prototype, and then prefer more prototypical over less prototypical group members (e.g., Hogg & Hardie, 1992; Hogg, Hardie, & Reynolds, 1995). As Hogg (1992) puts it: “both ingroupers and outgroupers are liked for being prototypical of their respective groups because this confirms the clarity and meaningfulness of the existing categorisation, and thus ultimately the way in which self is defined” (pp. 103–104).

Second, the metacontrast process leads people to expect similarities and differences among people in a particular context to fit the parameters of the relevant categories (*comparative fit*), and the attributes of specific people to make sense and be meaningful in terms of the relevant group prototype (*normative fit*). Poor comparative or normative fit causes people to adopt alternative categorizations that better account for features of the stimulus setting (Oakes, Haslam, & Turner, 1994; Oakes, Turner, & Haslam, 1991). Third, the metacontrast process anchors self-conceptualization and self-regulation in the relevant self-inclusive prototype, and thus defines the perceivers’ own attitudes, feelings, and behavior – attitudes, feelings, and behavior become ingroup normative (e.g., Abrams, 1990, 1994, 1999; Hogg, 1992, 1996).

Metacontrast as a basis for reactions to ingroup deviance

Metacontrast plays an important role in defining deviance in groups. It identifies the best contrasting categories in a particular context, it assesses the extent to which existing intragroup differences and intergroup similarities optimally satisfy this categorization, and it defines the extent to which an ingroup member may deviate without threatening the optimality of the categorization (e.g., Hogg, 1992). Metacontrast may even lie at the heart of negative emotional reactions to deviant ingroup members. It defines a prototype to which self is assimilated (Hogg & Abrams, 1988; Hogg & Turner, 1987; Turner, Wetherell, & Hogg, 1989), and thus provides the yardstick for feelings about other people. Those who conform are prototypically similar to self, are prototypically likable, and are liked; whereas those who are deviant are prototypically dissimilar, are prototypically dislikable, and are disliked (e.g., Hogg, 1992).

In other words, when group membership is the salient basis for self-regulation, the most relevant goal is, by definition, the subjective validation of social identity. Ingroup members who conform to the ingroup prototype validate people’s social identity, and thus attract positive reactions. In contrast deviant behavior jeopardizes people’s confidence in the distinctiveness of the ingroup’s positive characteristics relative to relevant outgroups, and thus attracts negative reactions. Derogation of ingroup deviants is functional for the group – it protects positive social identity by enforcing normative solidarity.

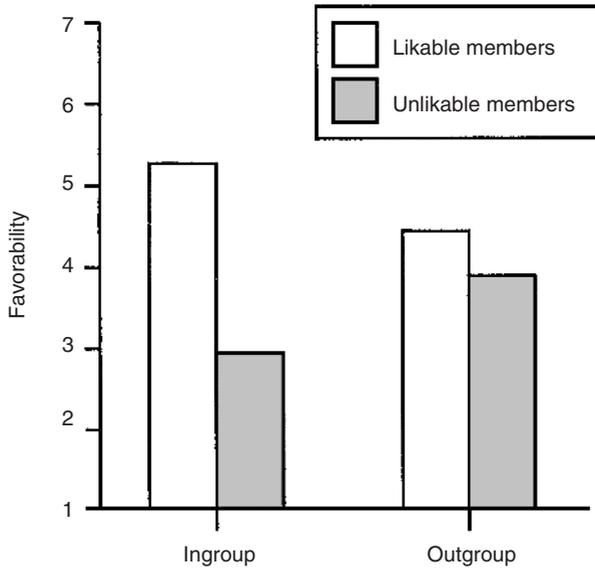


Figure 17.1. Ratings of likable and unlikable targets as a function of group membership. Adapted from Marques, Yzerbyt, and Leyens (1988).

The “black sheep effect”

Research on the black sheep effect is consistent with this analysis. In one study (Marques, Yzerbyt, & Leyens, 1988, Exp. 1), Belgian students rated “attractive Belgian students,” “attractive North African students,” “unattractive Belgian students,” and “unattractive North African students.” Attractive ingroup members were judged more favorably than attractive outgroup members. The opposite occurred for unattractive members. Figure 17.1 shows the general pattern of judgments that correspond to the black sheep effect.

Ingroup bias and the black sheep effect. This pattern of judgments suggests that people can and do differentiate ingroup from outgroup as a whole, at the same time differentiating between specific likable and unlikable ingroup members. Marques, Robalo, and Rocha (1992, Exp. 2) found a co-occurrence of ingroup bias in judgments of ingroup and outgroup as a whole, and the black sheep effect in judgments of specific likable and unlikable members (cf. also Branscombe, Wann, & Noel, 1994).

Marques and Yzerbyt (1988, Exps. 1–2) found this same effect in both intergroup and intragroup settings. Law students listened to two short prose excerpts and were asked to rate the speakers and their “discursive ability” (e.g., “what is your global impression of this person?”; “what is this person’s ability to capture the audience?”, etc.). In Experiment 1, participants judged an ingroup and an outgroup member whose speeches were both either good or poor. The context of judgment was thus, in this case, intergroup. In Exper-

iment 2, participants judged a good and a poor speaker who were both either ingroup members or outgroup members. This was, thus, an intragroup context of judgment. In both studies, participants judged the overall discursive ability of the ingroup to be superior to that of the outgroup. Also, in both cases (regardless of the intergroup or intragroup context), participants judged the good ingroup speaker more favorably than the good outgroup speaker, and derogated the poor ingroup speaker more strongly than the poor outgroup speaker.

The simultaneous emergence of ingroup bias and the black sheep effect, and, more importantly, the emergence of the black sheep effect in intergroup and intragroup settings raise questions about metacontrast. If participants' judgments had been guided straightforwardly by metacontrast, one might expect intragroup settings to increase the salience of the likability dimension relative to the intergroup dimension, particularly when judgments were made within the ingroup (cf. Marques & Páez, 1994; Marques, Páez, & Abrams, 1998). As a result, there would be stronger differentiation between likable and unlikable ingroup than outgroup members. In turn, intergroup settings, where participants evaluated either likable ingroup and outgroup members, or unlikable ingroup and outgroup members, would increase intergroup salience relative to the likability dimension. In this case, metacontrast might yield one of two results. First, participants might judge the unlikable ingroup member less negatively than the unlikable outgroup member. Second, assuming that participants had positive expectations for the ingroup, they would consider the unlikable ingroup member as outgroup typical and hence judge this member in a similar way as they judged the unlikable outgroup member (cf. Marques & Páez, 1994, for other alternatives). However, the pattern of evaluations found in the intergroup setting was the same as the one found in the intragroup setting. Together these results suggest that people differentiate between likable and unlikable ingroup members in order to sustain a positively distinctive social identity.

The black sheep effect and the relevance of norms for intergroup distinctiveness. The above idea has additional support from research showing that deviants are particularly severely derogated when they diverge from norms that define positive ingroup distinctiveness. For example, Marques (1990) found that when the norms against which members were compared were relatively irrelevant to group definition, both deviant and conformist ingroup members were viewed in a positive light relative to relevant outgroup members – there was marginally significant ingroup bias for deviants and for conformists. When the norms were rated as highly relevant to intergroup differentiation, the usual black sheep effect re-emerged.

Similarly, Marques, Yzerbyt, & Leyens (1988, Exp. 2) had students evaluate ingroup or outgroup members on two dimensions. One dimension applied equally to ingroup and outgroup (it was a nondistinctive norm), and the other dimension applied only to the ingroup (it was a relevant ingroup prototypical standard, and hence a norm for intergroup differentiation). The results revealed that participants in the nondistinctive norm condition judged normative ingroup and outgroup members equally favorably, and judged counter-normative ingroup and outgroup members equally favorably – group membership did not seem to matter. In the distinctive norm condition, participants judged normative and counter-normative ingroup members as favorably and as unfavorably.

ably as in the nondistinctive norm condition; however, judgments of outgroup members were now less extremely differentiated.

It is notable that the black sheep effect emerged where the norm provided a basis for differentiating between ingroup and outgroup. This would increase the salience of the ingroup–outgroup distinction, and normative ingroup members would contribute to positive ingroup distinctiveness because they validated the ingroup norm – thus, they were positively evaluated. Counter-normative ingroup members decreased the subjective validity of the ingroup norm, and contributed negatively to participants’ sense of legitimate positive ingroup distinctiveness – thus, they were more negatively evaluated. Outgroup members were less relevant than ingroup members for the purpose of validating the ingroup norm – thus, they were more moderately judged than ingroup members were.

One notable difference between “black sheep” studies and traditional studies of reactions to deviants in small groups, is that in “black sheep” studies participants evaluate personally unknown individuals, whereas in traditional studies participants actually engage in social interaction. Despite this difference, there are parallels, reflecting perhaps some common psychological processes. In both cases, participants derogate more strongly those deviants with whom they are interdependent. In the traditional studies interdependence is largely interpersonal, whereas in the black sheep situation, interdependence is in terms of common group membership and its consequences for individuals’ social identity. We devote the next section to exploring this comparison. To do this we invoke the idea of subjective group dynamics.

Subjective Group Dynamics

We have shown that people make intragroup distinctions within a broader, metacontrast-consistent, differentiation between ingroup and outgroup. This is quite consistent with self-categorization theory, in that derogation of ingroup deviants requires concomitant intergroup differentiation, and thus ingroup identification. The metacontrast principle emphasizes the denotative function of norms (e.g., Miller & Prentice, 1966). It specifies the criteria for establishing whether stimuli are “similar” or “different” in social situations. It defines the range within which group members may be considered as belonging to the ingroup or the outgroup. However, derogation of ingroup deviants is a *prescriptive* process, that depends on norms that describe whether ingroup characteristics are “good” or “bad” in light of perceivers’ motivations (Abrams et al., in press; Marques et al., 1998; Marques, Páez, & Abrams, 1998; Miller & Prentice, 1996). Norms are criteria that define acceptable and proscribed ranges of deviance *within* the group (cf. Forsyth, 1990, 1995; Sherif & Hovland, 1961; cf. also Erikson, 1966). Perhaps the black sheep effect is not strictly, or only, an outcome of the metacontrast process.

As described above, category salience rests on both comparative and normative fit. Metacontrast relates to comparative fit – the extent to which the category fits, and thus explains relevant similarities and differences among people in the social context. However, salience also rests on normative fit – the extent to which specific people’s behavior is rendered meaningful by the prototypical attributes of the category they belong to. Poor com-

parative and normative fit can cause people to recategorize the entire social context. For instance, consider supporters at a soccer match. There is a strong association between which team one supports and what colors one wears – the situation is characterized by strong comparative fit which makes it easy to encode the situation as one involving two opposing groups of team supporters. If, however, in the course of the match, some supporters of both teams behaved counter-normatively, for instance by throwing objects at the field, then normative fit is weakened, as is comparative fit. Metacontrast that opposes the two groups of team supporters is less useful. An alternative dimension (e.g. “hooligans” vs. “fair” supporters) would account for the situation with greater cognitive clarity. As a result, in judging a hooligan from their own team, supporters who considered themselves as “fair” would actually be judging that person as an outgroup member. The comparative context has been reconfigured from one based on teams to one based on “hooligan–non-hooligan.”

The implications for the black sheep effect are straightforward. People have more favorable expectancies about ingroup than outgroup members – thus, likable ingroup members have good normative fit, but unlikable ingroup members do not (Hogg, 1992). The poor normative fit of unlikable ingroup members would engage a cognitive reconfiguration of the social field, focused on new comparative dimensions that better accounted for these members. One such dimension might be likability: rather than the original dimension that differentiated ingroup from outgroup. However, there is evidence that (a) derogation of ingroup deviants is associated with favorable ingroup attitudes, (b) people are *less* attracted to unlikable ingroup members than to outgroup members, likable or unlikable, and (c) more favorable attitudes are shown toward likable ingroup than outgroup members (see above). This general pattern cannot only be attributed to the operation of comparative and normative fit. Evidence from research on the black sheep effect suggests that ingroup deviants are derogated precisely *because* they are seen as ingroup members.

We believe that derogation of ingroup deviants depends both on the operation of the metacontrast principle that specifies a salient intergroup distinction, and on the operation of prescriptive norms that follow from the metacontrast process. We need, therefore, to spell out the way in which denotative and prescriptive norms interact in the context of subjective group dynamics.

Denotative and prescriptive norms

We suggest that denotative and prescriptive norms differ in three important ways. First, they may be associated with different cognitive processes. Second, relative to denotative norms, prescriptive norm violation is likely to attract substantial interpretative attention, and to be viewed as a *volitional* act on the part of the violator. Third, denotative norms probably reduce self-awareness, whereas prescriptive norms increase awareness of self, not as an idiosyncratic individual but as a group member.

Intergroup scope of denotative norms and intragroup scope of prescriptive norms. Denotative norms define group prototypes, and thus, to differentiate ingroup from outgroup, they are framed by criteria that apply to both ingroup and outgroup. Examples of such criteria

would be skin color, or membership of a political party. In contrast, prescriptive norms are mainly ingroup regulatory – they apply in situations where group members behave in ways that conflict with ingroup expectations without necessarily decreasing intergroup distinctiveness. For example, crooked politicians would not decrease the distinctiveness of their party. However, from the standpoint of those who categorize themselves as supporters of one party, or as Caucasian (assuming they consider it negative to accept bribes), the salience of bribed ingroup members would also make salient the latitude of acceptable deviation from a value, or moral standard, that legitimates positive social identity.

Prescriptive norms and backward processing. Denotative norms are defined by metacontrast, whereas prescriptive norms may be the outcome of *backward processing* (Kahneman & Miller, 1986; Miller & Prentice, 1996). Conformity to denotative norms is likely to be relatively automatic and “mindless,” as such norms may be implicit. In contrast, conformity to prescriptive norms may be more deliberate and mindful, reflecting a decision about the advantages and costs of complying (Forsyth, 1990; Thibaut & Kelley, 1959). For example, people might wonder about the reasons that led a politician to accept a bribe, but they would be less likely to wonder why that person belonged to a given political party.

Kahneman and Miller (1986) defined backward processing as a form of counter-factual thinking that occurs when observed events run contrary to expectancies. In these situations, people generate a specific frame of reference that accounts for the counter-intuitive event, and they construct, online, a standard of comparison relevant to that particular context. Thus, ingroup deviance, which is contrary to normative expectations, may increase prescriptive norm accessibility. As Miller and Prentice (1996) put it, “because the evoked representations vary with context, so, too, do the resulting norms and standards. Moreover, because these standards are constructed from whatever image comes to mind, any factor that increases the accessibility of a particular representation will enhance its contribution” (p. 800). Therefore, in the same way as “intergroup” contexts automatically increase the accessibility of intercategory differentiation, intragroup deviance within such contexts may increase the accessibility of prescriptive norms. How deviants are evaluated will depend on whether the norm is constructed for denotative or prescriptive purposes (Miller & Prentice, 1996).

This argument is consistent with the idea that norms are also *proscriptive* (Forsyth, 1990). According to Forsyth, “groups rarely vote on which norms to adopt but, rather, gradually align their behaviors to match certain standards. As a consequence, norms are often taken for granted so fully that members do not realize their existence until a norm has been violated. Norms thus imply evaluation; people who break the norms are considered ‘bad’ and are open to sanction by the other group members” (Forsyth, 1990, p. 160). Deviants violate normative expectancies, and in so doing such norms become highly salient as standards that explicitly dictate ingroup and outgroup behavior. Prescriptive judgments ensue from the perceived evaluative consequences that ingroup members’ characteristics and behavior have for the social self. We propose that once intergroup distinctiveness is established by a denotative norm, ingroup members can devote attention to prescriptive norms that ensure consensus on criteria for positive ingroup evaluation.

Prescriptive norms and social self-awareness. The third difference between denotative and prescriptive norms relates to different levels of self-awareness involved in their application. Abrams's (1990, 1994, 1996) model of "social self-regulation," combines self-categorization principles with Carver and Scheier's (1981, 1998) self-regulation model. The latter assumes that regulation of behavior can vary from routine or automatic, to relatively conscious, but that at any level the process involves matching responses to a reference value or standard. When something does not match to standard, the regulatory system intervenes to correct the response. For most physical activities (e.g. making a typing error) the intervention is unlikely to require very much, or even any, conscious attention. However, for more complex tasks such as novel social judgments, choices, etc., self-focused attention is required to attend more closely to the relevant standard. The social self-regulation model proposes that self-regulation processes operate in the same way regardless of whether the salient self-image is at the personal or social end of the continuum, but the reference standards and hence consequences of self-regulation will differ markedly depending on whether personal or social identifications are salient.

When social identity is salient and attention is focused on the environment the person is depersonalized and has low self-focus (cf. Abrams, 1990, 1994). Their behavior will tend to match the relevant norms without much consideration. An example of this kind of situation might be attending a soccer match as a member of a group of team supporters. Here there is likely to be congruence between ingroup prototypical standards (e.g. wearing team colors, sitting with ingroup supporters, cheering when the team does well) and one's characteristics as an ingroup member. Consequently, perceptions and judgments and behavior maintain intergroup differentiation alone and require little self-regulation. In such simple social situations comparative fit ensures clear-cut intercategory distinctiveness, and makes denotative norms salient. People establish the respective category prototypes, assimilate to the ingroup prototype, engage in ingroup prototypical conduct, and expect other ingroup and outgroup members to match the prototypical expectancies ascribed to their respective groups. Denotative norms describe the relevant properties that differentiate between groups, as well as features that the perceiver shares with or does not share with these groups. People's focus is restricted to a shared ingroup image that generates perceptual interchangeability between self and ingroup, and perceptual discontinuity between self and outgroup. This provides people, not only with a sense of distinctiveness of their social identity, but also with subjective validity of their beliefs relative to this social identity. When the perceptual setting does not ensure a clear match between these denotative properties, normative fit may serve as a basis for redefining the relevant categorizations in the situation (see above).

In different circumstances, particularly if an ambiguity or unforeseeable event arises (e.g., an ingroup supporter starts to throw missiles at the referee), a person may be unsure as to how to behave. In this case they will search for and attend to relevant standards for action. Subjectively and cognitively they will be in a state of heightened self-focused attention. An example of this kind of situation might be when some ingroup members violate prototypical ingroup expectations.

Deviant behavior draws attention to the possibility that the ongoing standard or norm for behavior is not correct. In particular it raises the possibility that self, rather than the deviant, is out of step with the relevant group norms. It should precipitate a self-

attention process of further checking for valued standards, and monitoring to ensure that these standards are adhered to. When self-focus on group membership is high people will focus on prescriptive standards to consolidate self-stereotyping and maintain adherence to ingroup norms (see Scheier & Carver, 1981; see also Cialdini, Kallgren, & Reno, 1991; Marques, Páez, & Abrams, 1998). Concern with the subjective validity of social identity should not only lead people to search for favorable intergroup comparisons, but also to actively establish the validity of that positiveness by ensuring the group's valued standards are matched as closely as possible. For this reason people are not just concerned to conform personally to such standards (e.g., Abrams et al., 1990; Hogg & Turner, 1987), but to exert the subjective equivalent of normative influence upon deviant ingroup members.

There are, moreover, situations in which group members' characteristics or behavior actually oppose valued ingroup standards, while their denotative features still match the contrast between ingroup and outgroup prototypes (e.g., a supporter, wearing full team colors, starts to yell abuse at an ingroup team member). We propose that such situations will be experienced by other ingroup members as self-regulation failures. Because they are depersonalized, and hence are subjectively fully interdependent with the ingroup, the self-regulatory process will engage responses designed to restore and reinforce subjective ingroup uniformity around valued ingroup standards. Note that the value is attached to the standard, not to individual group members, in this situation. Initially this may be manifested as aversive reactions to ingroup deviants and positive reactions toward normative ingroup members. It can also be manifested in positive feelings toward outgroup members who support the legitimacy of prescriptive ingroup norms (Marques et al., 1998). Because of depersonalization, the prescriptive norm, rather than denotative membership, becomes the focus for subjective validity of identity. The self-regulatory process essentially orientates the person to endorse evidence that provides relative support for the norm and to reject evidence that relatively opposes it. As a result, people restore their subjective commitment to, or social identification with, the group. Figure 17.2 summarizes this process, corresponding to our model of subjective group dynamics.

The Impact of Norm Awareness on Evaluations of Ingroup Deviants

There is some empirical support for this analysis. Marques et al. (1998, Exp. 3) conducted a two-phase experiment, ostensibly about jury decision making. In the first phase, participants examined a murder case and were informed of two distinct patterns (pattern-X and pattern-Y) of decision making. They ranked in descending order of responsibility six characters involved in the case, and also gave the experimenter a short written account of how they had appraised the case. They were told that their decision-making pattern could be determined from these latter accounts. One week later participants were told which pattern group they belonged to, and were reminded of the responsibility rankings they had given. They were then divided into two conditions – in one (no norm condi-

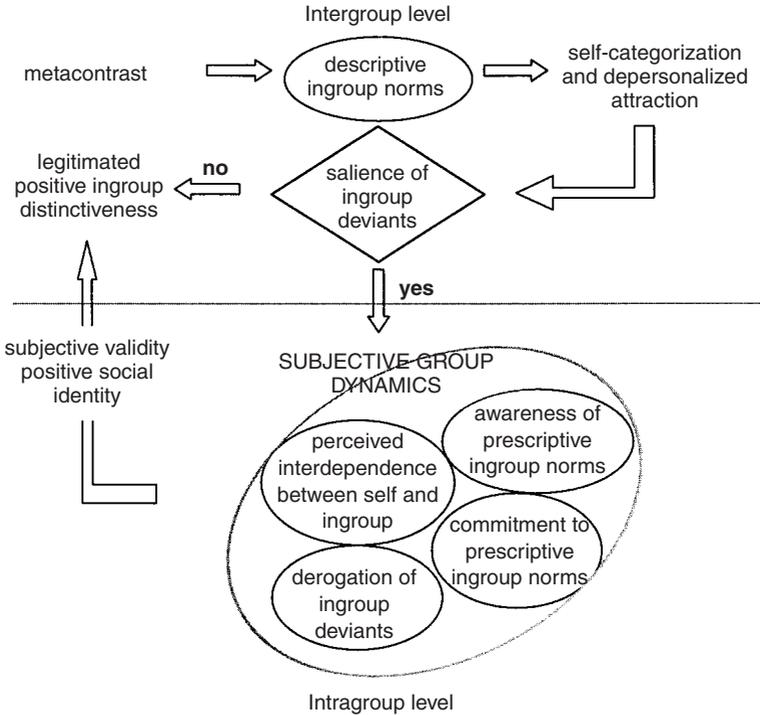


Figure 17.2. A model of “subjective group dynamics.” Adapted from Marques, Páez, & Abrams (1998).

tion), intragroup norms were not made salient; in the other (norm condition), written instructions stated that there was a norm for people belonging to their pattern group to rank the characters in a specific order, and for members of the contrasting pattern group to adopt the reverse ranking. Thus, we explicitly directed attention to the ingroup reference standard. To make it clear that rankings were not a criterion for group membership, participants were explicitly reminded that the sole determinant for pattern membership was their appraisals, not their rankings. Finally, participants were given the ranking made by five ingroup or five outgroup members. Ingroup members’ rankings were constructed such that: (1) each participant’s response fully matched the ingroup norm; (2) four (normative) ingroup members displayed exactly the same response; and (3) one (deviant) ingroup member displayed a response similar but not identical to the outgroup. In the outgroup condition, this pattern of information was reversed. Participants then judged each member as well as their group as a whole.

The results supported the subjective group dynamics model (see Figure 17.3). First, participants judged the ingroup as a whole more favorably than the outgroup. Second, within the no-norm condition, normative and deviant ingroup members were always judged more favorably than outgroup members (actually, deviant members were judged

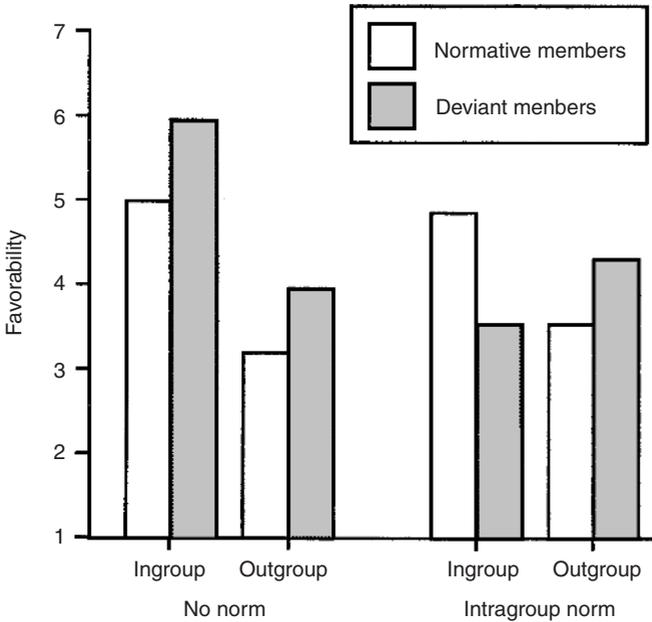


Figure 17.3. Ratings of normative and deviant members as a function of norm awareness and group membership. Adapted from Marques, Abrams, Páez, & Martínez-Taboada (1998).

significantly more favorably than were normative members). This supports the idea that exclusive focus on social identity produces undifferentiated judgments of ingroup and outgroup members and enhances individuals' concerns only to generate positive ingroup distinctiveness. However, when participants were made aware of an existing prescriptive norm they clearly favored those ingroup or outgroup members who were closer to the ingroup norm. This seems to support our distinction between denotative and prescriptive norms, and the impact of the latter in evaluations of ingroup members.

In a second study, Marques et al., (1998, Expt. 2) reasoned that a different way to make intragroup norms salient is to make people explicitly accountable to fellow ingroup members. The procedure was similar to the previous study, except that all participants were told about the prescriptive norm, and were informed that their judgments of group members would later be scrutinized either by typical ingroup members or by typical outgroup members. Accountability to others increases self-attention (cf. Abrams, 1990; Scheier & Carver, 1981). In line with our ideas about the interplay between high self-attention and high salience of social identity, we expected that accountability to ingroup members would increase focus on the ingroup prescriptive aspects of self. As a result, people's judgments should be more ingroup prescriptive in the ingroup accountable than the outgroup accountable condition. Consistent with this reasoning, and with results of the earlier study, participants did evaluate the ingroup as a whole more favorably than

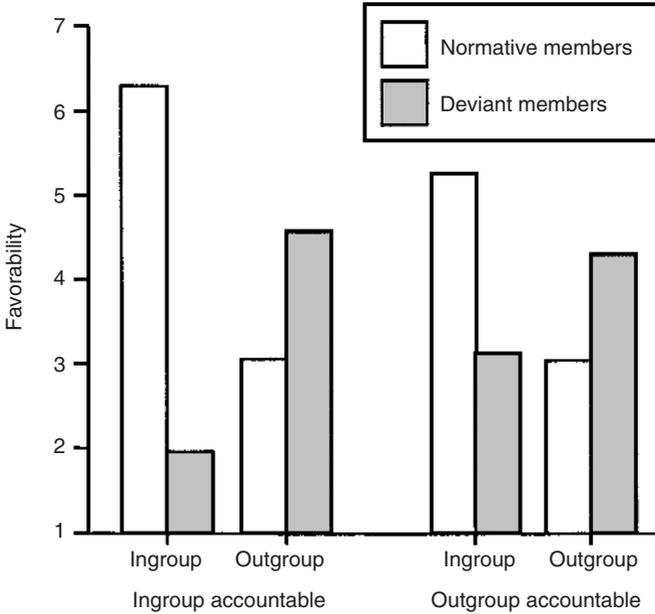


Figure 17.4. Ratings of normative and deviant targets as a function of ingroup or outgroup accountability and group membership. Adapted from Marques, Abrams, Páez, & Martinez-Taboada (1998).

the outgroup as a whole. This effect was stronger in the ingroup accountability condition than in the outgroup accountability condition. More important, participants derogated the deviant ingroup member more strongly in the former than in the latter condition (see Figure 17.4).

Together, these results suggest that denotative and prescriptive norms operate simultaneously in judgments of groups and their members. Metacontrast alone does not seem to provide a straightforward account for these results. As discussed, a salient intergroup dimension should have caused participants to assimilate ingroup and outgroup members to their respective prototypes. This did happen in the no-norm condition, and to a lesser extent in the outgroup accountable condition. However, when participants were aware of ingroup norms or were accountable to ingroup members, they derogated ingroup deviants, while differentiating the ingroup from the outgroup as a whole. Moreover, in these latter conditions, participants actually upgraded outgroup deviants (i.e., outgroup members who were closer than other outgroup members to the ingroup norm). If these judgments rested exclusively on metacontrast, outgroup accountability should make intergroup comparison more salient, and participants would show stronger ingroup bias in judgments of the ingroup and outgroup as a whole. They should also upgrade ingroup members relative to outgroup members, regardless of whether these members were ingroup normative or deviant. Instead, participants actually showed stronger ingroup bias,

while derogating ingroup deviants more in the ingroup accountable condition. This particular result suggests that when prescriptive norms are salient, people simultaneously value intergroup distinctiveness *and* ingroup normativeness.

The structuring function of ingroup deviance

We have proposed that derogation of ingroup deviants reinforces people's commitment to the group. To investigate this idea, Marques et al. (1998, Exp. 4) used a procedure similar to that above, except that accountability was not mentioned, and participants were asked to report their identification with ingroup and outgroup on two occasions – once immediately after they were categorized (pre-identification) and once after they evaluated the normative and deviant ingroup or outgroup members (post-identification). Not surprisingly, participants reported higher ingroup than outgroup identification on both occasions. Consistent with the preceding experiments, participants also evaluated normative ingroup members more favorably than the ingroup deviant, and judged the outgroup deviant member more favorably than outgroup normative members. But, the most interesting result was that the more participants identified with the ingroup relative to the outgroup before evaluating group members, and the more they derogated members who deviated from ingroup norms relative to ingroup normative members, the more they identified with the ingroup relative to the outgroup after evaluating these members. In other words, ingroup identification increased intragroup differentiation, which, in turn, reinforced ingroup identification. These results clearly support the idea that derogation of ingroup deviants indeed increases the subjective validity of social identity.

This is consistent with an important function of deviance for groups. In evoking overt or tacit derogatory reactions from normative members, ingroup deviants may strengthen other members' commitment to group standards (cf. Durkheim, 1982; Forsyth, 1990; Miller & Prentice, 1996). To quote Simmel, “. . . the opposition of a member to an associate is no purely negative social factor [. . .] It allows us to prove our strength consciously and only thus gives vitality and reciprocity to conditions from which, without such corrective, we would withdraw at any cost. Opposition achieves this aim even where it has no noticeable success, where it does not become manifest but remains purely covert. Yet while it has hardly any practical effect, it may yet achieve an inner balance [. . .], may exert a quieting influence, produces a feeling of virtual power, and thus save relationships whose continuation often puzzles the observer” (1955, p. 19). This is also consistent with Durkheim's (1912, 1982) view that, in igniting punitive reactions, deviance ultimately contributes to the reinforcement of the group's normative system. In a similar vein, Hewstone (1995, p. 180) claimed that, “[. . .] deviant acts, or rather the collective responses of condemnation and punishment which they attract, serve to sustain the solidarity and coherence of the community, providing a fundamental source of moral instruction.” Deviance would become, to a certain extent, functional to the group. It delimits through contrast the criteria that legitimate group membership (see Erikson, 1966; Hamilton & Rauma, 1995). By punitively reacting to those who fail to commit themselves to the group, normative members may express, discover, or reinforce their own commitment to those norms.

Pro-norm and anti-norm deviance

One possibility raised by some of the studies reported above is that ingroup deviants were rejected and outgroup deviants accepted because they undermined the integrity of their respective groups – a bad thing in the case of the ingroup deviant, but a good thing in the case of the outgroup deviant. From a subjective group dynamics perspective the critical determinant of this pattern of reactions to deviants is whether or not the deviant behavior validates ingroup norms relative to outgroup norms. Some forms of deviance may actually be acceptable, or at least not represent a contradiction of the reference standards that validate social identity. Specifically, norm-consistent (or “pro-norm”) deviance represents a variation that, in an intergroup context, does not undermine or weaken relative group norms. Therefore, unlike a purely intragroup situation (the small group dynamics contexts) in which any deviance may invite conformity pressure, when social identity is salient deviation will be accepted if it is consistent with the group’s normative standard and rejected if it opposes that standard.

Abrams et al. (in press) conducted two experiments that confirmed this analysis, and led to the conclusion that reactions to ingroup and outgroup deviants are particularly sensitive to deviation that “crosses” group boundaries. In the ingroup such deviants are despised and rejected. However, outgroup deviants who endorse ingroup norms are made welcome. In contrast, equally deviant pro-normative group members are quietly tolerated or treated as if they are typical. This pattern of responses demonstrates clearly that the meaning of deviance is shaped by the intergroup frame of reference and that group members judge both their groups as a whole and the individual members within this framework.

Concluding Comments

The focus of the present chapter may be subsumed by a quotation from Le Bon. In presenting his view of how peoples and “races” evolved across history, Le Bon claimed that “suppressing internal conflict is a fundamental requirement for our national life. We would be helpless against outside foes if, at the same time, we had to fight against inside enemies [. . .]. No society would survive for long without keeping internal peace. From the ancient Greeks to the modern Poles, those peoples who were unable to relinquish from their dissensions succumbed to servitude and lost the very right to hold an history” (Le Bon, 1916, pp. 13–14, our translation). In this chapter, we have assumed that this view is part of people’s lay psychology – it guides their behavior in striving to generate a satisfactory sense of group membership and a positive social identity.

Developing on constructs from social identity and self-categorization theory, the idea of *subjective group dynamics* assumes that people have meaningful representations of the nature of intragroup and intergroup relations in particular social settings, and that they attempt to maximize intergroup distinctiveness as well as to subjectively validate beliefs in a positive social identity. Intergroup differentiation is necessary before deviants are

judged as ingroup members, but derogation of deviants also legitimates people's beliefs in positive ingroup distinctiveness. We also assume that there is no basic difference between derogation of ingroup deviants in groups in which members interact with one another, and in groups defined only in terms of people's sense of membership and positive attraction to the group. The key factor in both cases is perceived interdependence between self and group, and the resulting ingroup norm awareness. Whereas intergroup distinctiveness is associated with denotative norms, or group prototypes, ingroup norm awareness is associated with prescriptive norms.

Denotative norms, or prototypes, that differentiate between groups, and prescriptive intragroup norms, that sustain the subjective validity of social identity are, most often, congruent. However, there are situations in which comparative fit and normative fit on the one hand, and "prescriptive fit" on the other, fulfill distinctive functions. Whereas comparative fit and normative fit function inductively and deductively to generate meaningful intergroup differentiation, prescriptive norms provide standards on which individuals base their judgments about the legitimacy of positive ingroup distinctiveness (cf. Abrams et al., in press; Marques et al., 1998; Marques, Páez, & Abrams, 1998).

We still need to map out the strengths and limitations of these ideas. For instance, we still need a comprehensive test of the steps proposed by the model, as well as studies analyzing the impact of subjective group dynamics on other forms of deviance. Our studies have dealt with deviants who adopt an undesirable stand, deviants who adopt a stand that is similar to an opposing group, deviants who actively show relative support for an opposing group, and deviants who are extreme in support of their own group. It would be interesting to know the limits of acceptability of outgroup members that endorse ingroup norms, or indeed whether other influences can protect defecting ingroup members from rejection. Another interesting issue would be to know if group members who over-achieve or exceed normative expectations in a prototypically positive direction are also treated as deviants (e.g., Hogg & Terry, in press; cf. Feather, 1994). Finally, what is the relative impact of prescriptive norms in more extreme intergroup situations, such as those involving competition or actual conflict between groups? Would group members be more punitive toward deviants in these situations, or would they be more lenient and wait for a better opportunity to deal with "domestic" matters?

These directions point toward a broader analysis of social categorization, group membership, and deviance – one which builds on the conceptual foundations we have presented in this chapter, but extends to incorporate a focus on the phenomenology of being a deviant, and a focus on the dynamics of deviant groups in intergroup contexts.

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CHAPTER EIGHTEEN

Collective Identity: Group Membership and Self-Conception

Dominic Abrams and Michael A. Hogg

No man is an island, entire of itself,
every man is a small piece of the Continent,
a part of the main.

Devotions, 17. John Donne 1624

William James (1890) distinguished between the “I” and the “Me.” The “I” is the self as experienced, the active thinking processor. The “Me” is the stock of empirical information about oneself, which has material, social, and spiritual components. The self is a central concept in social psychology (Ashmore & Jussim, 1997; Baumeister, 1999; Dweck, 1999), reflecting in part the importance of the individual in modern society as a target for social influence and a unit of economic activity. However, much of the research activity only considers the self as an individual, and this misses an important part of James’s analysis. James argued that, in principle, one has as many social selves as there are individuals who recognize one. In practice, these selves are determined by the groups of people about whose opinion one cares. James argued that people can change their persona to reflect the social audience. These transformations involve shifts of identity in different contexts, not merely forms of strategic self-presentation. James believed that the “club opinion” is a powerful psychological force. That is, there are times when we see ourselves wholly in terms of our representativeness of a group, and we embody the group’s perspective as our own. The psychological connection between the self and social groups is the issue we examine in this chapter.

The small group is an obvious domain in which interpersonal and intragroup relationships interact dynamically with the self-concept (Abrams, 1992a; Hogg, in press c; Hogg & Williams, 2000). However, the physically present face-to-face small group

context is by no means the only or the most important forum of social interaction and exchange. As individuals, we are encouraged to concentrate on the personal aspects of our lives in terms of idealized or iconic goals, and are consequently drawn away from the traditional framework of specific social commitments and networks (Elias, 1988). Greater access to communication technologies and transportation mean that cultural, ethnic, and geographic groups are less able to constrain their members or restrict access to alternative social perspectives. The “group,” or more particularly the ingroup, is no longer restricted to specific social networks of known others. Groups can become represented in the self-concept through many channels. In the light of these social changes, how can social psychology make sense of the relationship between the social groups and the self, and to what extent is the notion of group relevant to the self-concept?

The present review concentrates mainly on the way social categorizations become a part of the self as social identifications (see Abrams & Hogg, 1990; Hogg & Abrams, 1988; Onorato & Turner, in press; see Hogg, this volume, chapter 3). The first section describes the historical divergence of sociological and psychological perspectives on the self. The second section describes the predominant perspective on self as an individual comparative entity and describes some taxonomic accounts of the self that distinguish between individual and collective components. The third section examines the social identity approach, which posits that the self-concept is a product of a self-categorization process. We explore the relationship between process-based flexibility and structural stability in the self, and the relationship between social and self-perception. The fourth and fifth sections consider the problem of individual variation and motivation, particularly the relationship between social identity and self-regulation, self-esteem and uncertainty.

Social Psychological Theory and the Self

How has social psychology regarded the role of groups, collectivities, and categories in psychological life? Some theorists have depicted society as a superordinate structure. For example, Wundt's *Völkerpsychologie* focused on, “those mental products which are created by a community of human life and are, therefore, inexplicable in terms merely of individual consciousness since they presuppose the reciprocal action of many” (Wundt, 1916, p. 3). Wundt regarded collective phenomena, such as language, religion, customs, and myth as social phenomena that could not be understood in terms of the psychology of the isolated individual (this being the province of experimental psychology). The conceptual distinction between the individual and society was also central to Durkheim's (1898) analysis of “social facts” and collective representations. Durkheim strongly believed that societal forces gave rise to collective meanings that were so powerful that they overrode any individual tendencies. Critically, these meanings were not the same as individual beliefs or perceptions, they had a life and force of their own. This non-reductionist analysis was of course a founding plank in sociology and one that, in the minds of many, continues to distinguish it from social psychology (Farr, 1996).

The power of the group is echoed by themes in Le Bon's (1896) analysis of the psychology of the crowd, but Le Bon as well as Tarde (1901), Trotter (1919), McDougall

(1920), and Freud (1922) considered the crowd or group mind to be essentially primitive and uncontrolled. This view was attractive to theorists who wanted to explain the apparent irrationality, extremity, and baseness of collectives (see Reicher, this volume, chapter 8). However, the idea that the group could have, or generate, a psychological phenomenon that was not individual was incompatible with the views of psychologists such as Watson (1919) and Allport (1924) who wanted the discipline to adopt a strictly rational and scientific approach that focused on behavior rather than on concepts such as “mind.”

The split between psychology and more sociological theories of social processes was accentuated with Floyd Allport’s pronouncement that, “There is no psychology of groups which is not essentially and entirely a psychology of individuals” (Allport, 1924, p. 4; see Graumann, 1986). By 1925 sociology and psychology had become discrete disciplines (Manicas, 1987), and this meant that social psychology and the study of groups in psychology became separated from its collectivist past. As a result, different levels of analysis were not well articulated in theory and research (Doise, 1986).

According to Farr (1996), there are two social psychologies. The sociological form owes much to collectivist perspectives, and in an extreme form it regards psychological processes as barely relevant for explaining the impact of social categories and institutions on societal change and development. The psychological form is rooted in the behaviorism and reductionism of Watson and Floyd Allport. At its extreme, social categories, institutions, and roles are treated simply as factual inputs that individuals process, without much regard to the way the meaning of the categories is shaped by societal context (see Hopkins, Reicher, & Levine, 1997, for a contentious critique of the way psychologists treat race as a stimulus variable in social cognition research on prejudice).

The direction taken by social psychology throughout the following six decades suggests that, as far as most were concerned, Allport had won the day. For example, the idea that the group somehow dehumanizes us, stripping us of our identity and individuality, re-emerged in the form of deindividuation theory (Diener, 1980; Zimbardo, 1969; see also Reicher, this volume, chapter 8). As a result, James’s view that the group may be represented in the self (as distinct from simply influencing the self) was neglected in much of the theorizing that followed his writing (see Hogg & Abrams, 1988; Reicher, 1984; Tajfel, 1978). An individualistic meta-theoretical framework also pervaded the enormous arena of group dynamics, which was dominant from the 1940s to the 1960s (e.g., Cartwright & Zander, 1969; Shaw, 1981). Despite its roots in Lewin’s potentially collectivist field theory (e.g., Lewin, 1952), group process research has largely been a study of interpersonal interaction in small face-to-face groups, in which “I” reigns supreme, and any reference to “we” is largely descriptive; “we” is simply an arithmetic aggregation (Hogg, 1992).

The symbolic interactionist agenda, focusing on interpersonal relations, came to dominate social psychological theorizing about the self. The uptake of concepts such as self-awareness and the perspective of the specific or generalized other (Cooley, 1902; Blumer, 1937; Mead, 1934) and the importance of role and self-presentation (Goffman, 1959) encouraged psychologists to focus on the small-scale interpersonal dynamics that provide feedback about the self and a basis for impression formation (Farr & Moscovici, 1984). Emerging from this sociological tradition are two major themes in the social

psychology of the self. Self-awareness (either phenomenologically or in terms of the imagined perceptions of others) and self-evaluation (either for self-knowledge or self-maintenance; Festinger, 1954). Both themes have focused research on intra- or interpersonal situations, which are believed to provide the basis for individual self-concepts.

The symbolic interactionist framework was not without problems. For example one well-cited review found no strong link between people's self-concept and the way others actually perceived them. However, the association between self-concept and beliefs about others' perceptions of self was reasonably strong (Shrauger & Schoeneman, 1979). Perhaps the difficulty of capturing either the relevant set of "others" or the relevant measures of self-concept has led researchers to focus more on the way specific events or encounters can affect a specific self-evaluation. The social psychological analysis of self has tended to be parceled into different themes and effects (e.g. self-presentation, self-enhancement), quite unlike anything that might have been envisaged by theorists such as Mead. In sociological theory concepts such as role are part of a complexly patterned and highly organized system of social regulation of behavior that is widely shared and has long-term meaning and continuity. In contrast, social psychological operationalizations of the role concept have tended to focus on role enactment in terms of specific individual behaviors (e.g. Crocker & Luhtanen, 1990; Snyder, 1981; Wicklund & Gollwitzer, 1982) or to treat role as a general sense of obligation, duty, or commitment (e.g., Mowday, Steers, & Porter, 1979).

Self as a Comparative Entity

In social psychology, the dominant meta-theory remains one in which the self is a unique, individual entity that is relatively autonomous and independently motivated. For example, Baumeister's (1999) choice of articles in his collection of readings on *The Self in Social Psychology* reflects a ballot mailed to the membership of the International Society for Self and Identity, and includes topics such as self-regulation, self-awareness, self-presentation, self-esteem, self-evaluation, and self-affirmation. None of the articles focuses on group processes, intergroup relations, or social identity. The collection is largely concerned with (a North American view of) the self as an individual psychological entity. Baumeister (1998) argues that selfhood is based in three human experiences: reflexive consciousness, interpersonal being, and executive function.

Many theories of the self emphasize its comparative nature, echoing James's distinction between "I" and "Me." Comparisons may be made with self at different times, self in hypothetical states or with real or imagined people. For example, self-discrepancy theory (Higgins, 1987) posits that people make comparisons between the current state and some alternative reference point, such as an ideal self, or self as judged by significant others. According to Higgins (1987), the ideal and ought selves, from either own or other perspectives, represent "self-guides." Consistent with other self-regulation theories (e.g. Carver & Scheier, 1981; Duval & Wicklund, 1972), Higgins assumes that we are motivated to minimize discrepancies between actual states and self-guides. Different discrepancies produce different emotional reactions.

In a similar vein, self-evaluation maintenance theory (Tesser, 1988) and self-affirmation theory (Steele, 1988) both focus on discrepancies or differences between a self-state and some comparative reference point. Self-affirmation theory holds that people are generally motivated to maintain global conceptions of self-adequacy. As long as a relatively central aspect of the self can be affirmed, threats to less central and more specific aspects of the self lose their impact. The need for self-affirmation reduces when specific threats reduce, and similarly self-affirmation can reduce the impact of specific threats. Self-evaluation maintenance theory also endorses the view that people seek to maintain or increase their self-evaluation. However, Tesser (1988) links self-evaluation directly to a reflection process and a comparison process. The comparison process involves a contrast between self and other, for example, if one is taking the same exam or performing an identical task and can be evaluated on the same dimension. The reflection process could be seen as a form of common self-categorization with the other person. If a person is linked to, or associated with, oneself, their achievements can reflect on the self. Tesser (1988) proposed that comparison is more likely when the dimension of performance is relevant (e.g., self and other both wish to become respected chess players, and are involved in the same chess competition). Reflection is more likely when the dimension is less relevant to oneself (one can bask in the reflected glory of a friend's achievements). As a result, people are motivated to judge others' performance more positively when the comparison dimension is irrelevant and the person is psychologically close, or the dimension is relevant and the person is distant. An implication of the theory is that we avoid similarity with others on dimensions that are important for our self-evaluation. Therefore we should be more comfortable in situations (and groups) that provide personal distinctiveness on relevant attributes (Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976).

Self-esteem is assumed to be an important characteristic that distinguishes people in terms of their traits or personality (Wylie, 1979) as well as being influenced by different situations. Self-esteem appears to be associated with having greater clarity of self-concept (Campbell, 1990). It provides an important buffer against anxiety (Greenberg, Solomon, Pyszczynski, Rosenblatt, Burling, Lyon, Simon, & Pinel, 1992) and may reflect the extent to which people are socially included or excluded (Leary, Tambor, Terdal, & Downs, 1995). Higher self-esteem also seems to be associated with further self-enhancement (Baumeister, Tice, & Hutton, 1989). Generally, research suggests that, given the option, we seem to prefer to evaluate ourselves through self-enhancement, and rather less so through the acquisition of knowledge about ourselves (Sedikides, 1993). People often engage in self-presentational strategies to shape others' perceptions of them (Baumeister, 1982; Snyder & Swann, 1978; Wicklund & Gollwitzer, 1982). More subtly, even though people feel good when they receive positive feedback, ultimately they take seriously feedback that verifies their self-image (Swann, Griffin, Predmore, & Gaines, 1987).

In much of this social psychological research on the self, the structure and content of self is often left implicit, researchers tending to study particular bits of self-related knowledge on a piecemeal basis. However, theory and research tend to start from the position that the individual is the primary locus of comparative judgments. After all, it is the individual that acts, that reacts, and that is reacted to by others.

Cultural differences in the self

Historical and cross-cultural analyses of the self suggest that we need to be cautious about using the individual person, either as the unit of measurement or as the unit of analysis (e.g., Baumeister, 1987; Logan, 1987). There are considerable differences in the way individuals and relationships are defined in different cultures (Carnevale & Leung, this volume, chapter 20; Bond & Smith, 1996; Triandis, 1994, 1995). Markus and Kitayama (1991) described how Japanese culture (which is relatively collectivist) is more concerned with interdependence, obligation, and social connectedness, whereas North American culture (which is relatively individualistic) is more concerned with independence and individuality. The different cultures also provide a basis for different self-construals (Singelis, 1994), which in turn are associated with different cognitive, emotional, and motivational features. Self-construals are hypothesized to be organized as regulatory schemas in the self-system (Markus & Wurf, 1987). They affect how we attend to and interpret information in terms of its implications for self. Put another way, the self is linked with different information and objects depending on one's self-construal. In individualistic countries such as North America people are more likely to describe themselves in terms of unique and distinctive traits or attributes, and to have self-related motives that reflect the importance of independence from others. In more collectivist cultures such as Japan, people are more likely to view themselves in terms of their family and other social ties and interdependence with others. Consequently, whereas in a North American context it is quite acceptable to proclaim one's achievements and for these to support self-esteem, in Japanese culture self-aggrandizement is frowned upon, and instead the biases seem to be toward modesty (Markus & Kitayama, 1991; Triandis, 1995). Although group memberships are important in both individualistic and collectivist cultures, it seems that commitments to specific social networks and obligations carry more weight in collectivist cultures, for example in relation to loyalty to organizations (Abrams, Ando, & Hinkle, 1998). This type of cross-cultural comparison reveals that there is a multiplicity of possible self-motives and possible self-construals (Singelis, 1994). Social psychological processes seem able to produce different self-conceptions in different ways, and this suggests that the "self" cannot be restricted to a particular type of structure or content. It seems that a crucial element is the contextual meaning of the relationship between the self and others.

The self and the group

Social psychology has always retained some conceptual links with sociology. A subgroup of researchers (e.g., Milgram & Toch, 1969; Sherif, 1966) explored how the individual and the group might be integrated within a psychological framework. This framework necessarily required the analysis of how individual psychological functioning articulates with social structure and context. Examples include Sherif's (1936) research on how norms emerge from interaction and are internalized to influence behavior, some of Asch's (1952) research on conformity to norms, and more recent research on the emergence of

social representations out of social interaction (e.g., Farr & Moscovici, 1984; see Lorenzi-Cioldi & Clémence, this volume, chapter 13). Newcomb (1950) was deeply impressed by Sherif's work as well as by symbolic interactionism, and argued strongly that:

One's own self and one's own group are interdependently perceived. The self may be figure against the ground of the group, as when one is evaluating oneself, or when one is "self-conscious." Or the group may be figure against the ground of the self, as when one is feeling proud or critical of one's group. Because one's own self is such a supreme value, then, the group which is indispensable to it also has a value. One may regard the self as a part of the group or the group as a part of the self; in either case they are inseparable, and to the individual both are values. (p. 297)

Social psychology is now re-embracing this kind of view, and there have been some interesting developments along the way, such as the scope of the definition of "group" (Brown, 2000). Theoretical orientations to the self vary in emphasis along a continuum from structure to process (Abrams, 1996; Markova, 1987). At one extreme, theorists are concerned primarily with the organization of self-knowledge in memory, whether dynamically related or simply as components of a personality structure. At the other extreme, theorists focus more on how the self functions. Most theories involve a mixture of both structure and process, but are usually more explicit about one than the other. Both consider ways that group and category memberships can be involved in the self-concept.

The organization of self-related information

Psychological models of self-structure assume that the self is well represented as an entity in memory, for example, as schemas (Markus, 1977). The precise nature of the cognitive representation is a matter of debate (Srull & Wyer, 1993). Keenan (1993) suggests that we make trait inferences about ourselves using autobiographical behavioral exemplars. It follows that our ability to make summary descriptions of ourselves depends on the number of instances of relevant behaviors we can retrieve from memory. Exemplar models have attracted support in accounting for group categorization judgments (Judd & Park, 1988; Smith & Zarate, 1990), trait inferences about others (Kahneman & Miller, 1986), and stereotyping (Rothbart & John, 1985). However, in relation to self-judgments Bellezza (1984, 1993) rejects the exemplar view as being unwieldy, and as involving an infinite regress to ever more restrictive categorizations.

Combined processes (e.g., the dual exemplar/summary view espoused by Kihlstrom & Cantor, 1984) may be able to account for transitions from exemplar to trait representation. Klein and Loftus (1993) suggest that trait representation can be functionally independent of autobiographical behavioral exemplars in judgments of self. Judgments about self, in contrast to judgments about others, are usually made with extensive information, acquired across contexts, and involving long retention intervals. These factors facilitate abstraction to summary traits. However, the question remains as to whether self-information is then partitioned into different types or clusters and what they might be. For example, there is evidence that self-information is more closely related to informa-

tion about others with whom we share close relationships than with friends or strangers, both when measured implicitly and by fMRI techniques (Aron, Aron, Tudor, & Nelson, 1991; Aron, Mashek, & Lewandowski, 1999).

Assumptions about the structure of self often form the basis for different models of motivation (Heckhausen & Dweck, 1998). The relationship between different components of the self-structure is often used to hypothesize a basis for differing goals (as does psychodynamic theory). For example, Higgins (1987) describes discrepancies between different “self-guides.” Markus and Nurius (1986) outline the impact “possible selves,” and Cantor (1990) examines how individuals set different life tasks for themselves (see Knowles & Sibicky, 1990, for an overview of different perspectives on the self). Markus and Kitayama (1991) have also described how cross-cultural differences in the content of self-definition relate to different associated motivations, as described earlier.

Several structural models distinguish between the more social and the more personal aspects of self. For example, Fenigstein, Scheier, and Buss (1975) (see also Buss, 1980; Carver & Scheier, 1998; Scheier & Carver, 1981) distinguished between the private and public self. Crocker and Luhtanen (1990) distinguished between a generalized collective self and personal self (cf., Greenwald & Pratkanis, 1984). Breckler and Greenwald (1986) proposed that the public, private, and collective selves emerge in a developmental sequence, each setting different ego tasks. In common with many other theorists (e.g., Cheek & Briggs, 1992), Breckler and Greenwald equate the public self with interpersonally orientated issues, the private self with “internal standards,” and the collective self with cognitions about group memberships. The question of whether these aspects of self are structurally independent is open to debate, but the practical value of a taxonomic approach seems to be widely accepted by researchers in areas ranging from self-presentation and self-awareness, to cross-cultural differences (Triandis, 1989).

More recently, Brewer and Gardner (1996) distinguished between three levels of self-representation: the collective, relational, and personal self. Brewer and Silver (in press) draw on social psychological, sociological, and political science ideas to characterize four perspectives on social identity: *person-based social identities* (individual group members’ internalization of group properties as part of the self-concept); *relational social identities* (based in interpersonal relationships within groups); *group-based social identities* (category definitions of the self based on shared category memberships); and *collective identities* (that are actively created or maintained through collective action).

Collective versus private selves

Trafimow, Triandis, and Goto (1991) proposed an explicit structural model in which self-cognitions are divided into two distinct components or “baskets.” The private self contains knowledge of one’s own attitudes, traits, feelings, and behavior. The collective self contains affiliations, group memberships, and connections to collectives of all types. In the two-baskets model the strongest associative connections are horizontal (within private self or within collective self). In Trafimow et al.’s studies, North American and Chinese participants were exposed to a prime and after a short delay were asked to complete a Twenty Statements Test (TST; Kuhn & McPartland, 1954). In the first experiment a

prime for private self asked subjects to think about how they were different from their family and friends, whereas a prime for collective self asked them to think about what they had in common with their family and friends. In the second experiment, the primes focused on issues of personal glory and power (private prime), or the glory of the family (collective prime). Subsequent self-descriptions on the TST were classified as reflecting personal self-descriptions (such as traits) or social self-descriptions (such as common fate categories). Chinese participants (from a collectivist culture) and participants in the collective prime condition mentioned a higher proportion of social self-descriptions than other participants. Self-descriptions of each type (social or personal) tended to cluster together at a higher than chance level. These results were taken to illustrate that accessibility of traits within a part of the self is greater than accessibility of traits between different parts. This pattern of findings was replicated recently by Trafimow, Silverman, Fan, and Law (1997) in Hong Kong, and by Trafimow and Smith (1998) with Native Americans.

The Social Identity Approach

The social identity approach (Hogg & Abrams, 1988), or perspective (Turner, 1999), encompasses a large volume of research and theory emanating from Tajfel's (1972, 1974) ambitious drive to develop a non-reductionist social psychological theory (see Hogg, this volume, chapter 3). Consistent with the way social identity theory was formulated (Tajfel & Turner, 1979), one branch of research has concentrated on the way cognitive contrast and assimilation affect perceptions of social categories and groups, and ultimately the self. This is most clearly formalized in self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The second branch has concerned the nature of intergroup relations in terms of the relative status of each group and the legitimacy and stability of the status relationship. This second branch has proven important for the prediction of behavior, and for our understanding of wider scale intergroup relationships (see Abrams & Hogg, 1990; Brewer & Brown, 1998; Ellemers, Spears, & Doojse, 1999; Giles & Johnson, 1987; Hogg & Abrams, 1993) and is beyond the scope of this review.

The social identity approach emphasizes that categorization involves differentiation of our self and others into meaningfully distinctive categories. The process is both inductive and deductive – inferences are made on the basis of category-based stereotypes, but those stereotypes depend on the features that maximally distinguish the category from relevant other categories (Oakes, 1996; Oakes, Haslam, & Turner, 1994). The process involves both the application of stereotypes to others, and the depersonalization of self. Depersonalization means that the self-inclusive category becomes self-defining. Social identity is the perception of self in terms of stereotypical ingroup attributes.

Throughout the 1980s social identity researchers (e.g., Turner & Giles, 1981) described social and personal identity broadly as consisting of category memberships and traits, respectively (see Hogg & Abrams, 1988, for a comprehensive review). The social identity/personal identity distinction was depicted as if these were two different parts of identity structure. At first glance, this would appear to be consistent with the Trafimow

et al. (1991) approach. However, self-categorization theory (Turner, 1985; Turner et al., 1987) more explicitly developed the analysis of social categorization to define personal and social identifications as being functionally antagonistic. Depersonalized self-categorization means that the self and ingroup are one and the same. For example, Smith and Henry (1996) have shown that when social categorizations are made salient, the ingroup becomes psychologically merged with, or linked to, the self. Depersonalization is also consistent with phenomena such as social projection, which seems to operate more strongly when people make judgments about others who share a categorization with self than when they are categorized as outgroup members (Kreuger, 1998; Kreuger & Clement, 1994). The functional antagonism means that if self-categorization becomes salient at a particular level (e.g., European) self-categorization at the lower level (e.g., British) becomes less salient. Which level of categorization is salient is flexibly influenced by contextually bounded comparisons between potential ingroups and outgroups (see Hogg, this volume, chapter 3).

Self-description as a function of context

The McGuire's research on distinctiveness revealed that people are more likely to describe themselves in terms of contextually distinct features (e.g., McGuire, McGuire, & Cheever, 1986). Social identity and self-categorization theory would assume that minority status is one of an array of factors that could make a particular categorization meaningful as a basis for perceiving self and others (Oakes, Haslam, & Turner, 1998; Oakes & Turner, 1986). In fact, the simple presence of outgroup category members (regardless of majority/minority status) can be sufficient to make the ingroup gender category salient in the self-concept (Abrams, Thomas, & Hogg, 1990). It makes sense that when only the ingroup is in mind, we distinguish among ingroup members (including self) either as individuals or as subgroup representatives, but when the outgroup is in mind the salient and meaningful distinction is between the ingroup category and the outgroup category. However, the boundary between self and outgroup is potentially quite variable and context dependent (Simon, 1997). A similar point is made by Brewer (1991), who argues that countervailing needs for distinctiveness and assimilation lead people to align themselves with groups that confer a meaningful identity in contrast to other groups, but with a strong sense of similarity or solidarity with a set of ingroup members. This process appears to operate in a context-relevant way, both in minimal group experiments and when the identity is linked to larger scale social categories and groups (Abrams, 1992b).

Trafimow et al.'s (1991) two-baskets model predicts that only one type of self-cognition is accessed at a time for structural reasons. In contrast, self-categorization theory predicts that self-cognitions are a function of the categorization process: personal and social identities are representations of self at different levels of abstraction relative to one another and to the social frame of reference (e.g. Abrams & Hogg, 1990; Turner et al., 1987). Different collective selves (self-categorizations) do not imply one another (unless framed by a superordinate categorization). Instead, any category should be most strongly associated with the specific attributes that are criterial for that particular categorization

(Abrams, 1993, 1996, 1999). For example, when self-categorization in terms of gender is salient, the collective (stereotypical) attributes of the gender ingroup should be more likely to be ascribed to the self. These attributes will appear as traits, behaviors, attitudes, etc. (Abrams, Sparkes, & Hogg, 1985; Hogg & Turner, 1987; Lorenzi-Cioldi, 1991; Oakes, Turner, & Haslam, 1991). The links from the gender category to gender-related features will be much stronger than links between one's gender and other categories. The largest number of associative links will be vertical, from categorizations to category features. This category–attribute linkage is well described in the literature on category-based perception (McGarty, 1999; Rosch, 1978). Self-categorization theory can be characterized as a hierarchical process model (Abrams, 1996), because the process generates the potential for the content of self to be determined by inferential cascades from categories to subcategories and other subordinate features.

A significant feature of the social identity approach is that apparent inconsistencies in individuals' behavior can be interpreted as reflecting activation of different depersonalized self-images or self-images that are at different levels of categorization, and framed by different social comparisons (Turner, Oakes, Haslam, & McGarty, 1994). The self can include and exclude attributes with great flexibility, but at any particular moment, the self is a specific product of a context-dependent comparison (cf., Fiske & Von Hendy, 1992; Markus & Nurius, 1986). Research shows that people consider ingroup category memberships as more self-descriptive when intergroup contrasts raise their salience (e.g., Abrams, Thomas, & Hogg, 1990; Hogg & Turner, 1987; Lorenzi-Cioldi, 1991; Simon, Glassner-Bayerl, & Stratenwerth, 1991; Simon & Hamilton, 1994). In a comparison of self-categorization and the two-baskets models, Abrams, Au, Waterman, Garst, and Mallet (reported in Abrams, 1996, 1999) found that priming a category membership increased the proportion of ingroup stereotype-consistent self-descriptions at the level of traits and that social (category) self-descriptions were associated more strongly with "private" (trait) self-descriptions than with other social self-descriptions. Take together, we think the evidence seems more consistent with self-categorization than with the two-baskets model.

How mutable are self-categories?

In some respects, the theoretical consequences of the self-categorization process do not chime well with people's subjective experience of themselves as relatively continuous and meaningfully coherent. If the self were truly as malleable as the self-categorization approach suggests (e.g., Oakes, Haslam, & Reynolds, 1999; Onorato & Turner, in press) it might become impossible to conduct normal social relationships because nobody would behave in a consistent or predictable way across contexts.

Some sociological models of self explicitly incorporate group memberships and roles. For example, Stryker (1987) discusses Master Statuses (see Ridgeway, this volume, chapter 15 and also R. H. Turner, 1987). These differ importantly from the personal and interpersonal aspects of self because they are well defined and stable, and do not depend on specific relationships (though they often encompass them). This approach to identity regards roles and broad group memberships as additional parts of an identity structure

but it does not develop a clearly social psychological model of how or when such elements of identity will affect behavior. There is a transition straight from the sociological to the psychological level of analysis (Hogg, Terry, & White, 1995).

Deaux (1992, 1996) and Breakwell (e.g., 1986) have argued that self-images involving both social *and* personal features can be meaningful or salient in a social situation, and that many self-images cannot sensibly be described at a single level of abstraction. The self-structure has a unique meaning for each person and is not restricted to a normative framework. In an extension of Rosenberg's (1988) hierarchical classification approach, Deaux (e.g., Reid & Deaux, 1996) suggested that self-classifications (be they roles or social categories) correspond to social identity while self-descriptions in terms of traits correspond to personal features of identity. The traits and categories are each structured hierarchically and traits and categories are linked but the particular structure is different for each individual. The chronic accessibility of particular self-images (cf., Higgins & King, 1981) reflects their vertical position in the hierarchy. An interesting feature of this model is that meanings of identity can change although the category labels may remain constant. Deaux, Reid, Mizrahi, and Ethier (1995) found five types of social identity among students: personal relationships, vocations/avocations, political affiliations, ethnic/religious groups, and stigmatized groups. These differed along various descriptive dimensions. Deaux et al. suggest that the interchangeability of identities may depend on their proximity in terms of defining dimensions. Deaux et al. (1995) contrast the idea from social identity theory that social identifications are "collective and relational" with their evidence that few social identities were relational and only ethnic, religious, some stigmatized, and some political identities were seen as collective. Occupational identities, in contrast, were perceived to be more individualistic.

Self-categorization theory does not address consistent individual differences effectively. For example, it does not offer a compelling account of why, when social identity is salient, not all group members feel or behave alike (Abrams, 1990; Deaux, 1996). Thus, there seems to be evidence both for flexibility and for underlying stability in the self-concept. The question is how a process account of the self can account for both features (Abrams, 1990, 1992a). We believe that, to some degree, subjective structural stability in the self must be based on stability in people's social comparisons and social frames of reference, or more specifically, their social relationships and networks (Abrams, 1992, 1996; Cinnarella, 1998; Simmel, 1922). This general subjective stability (within individuals) may be accompanied by many subtle (and not so subtle) variations that allow people to arrive at different interpretations of the same categorization at different times.

Although categorizations may remain very stable (e.g., one's ethnicity) there can be considerable flexibility at the level of attributes so that the meaning and evaluation of ethnicity varies depending on the comparison others and social context (Deaux, 1996). Similarly, role categorizations, such as "parent" can be subjectively defined equally easily as a social category membership (e.g., at a Parent-Teachers Association meeting) or as personal category (e.g., as parent to one's own child). The meaning, level, and content of self-categorizations are not determined by the category label, but by the comparison categories with which they are linked in memory and in the particular context. There is evidence that this is true of ingroup and outgroup perceptions (Abrams & Hogg, 1987;

Haslam & Turner, 1992; Haslam, Turner, Oakes, McGarty, & Hayes, 1992; Oakes et al., 1994).

In principle, the distinction between categories and attributes is itself highly mutable (Abrams, 1993, 1996, 1999; McGarty, 1999). As already mentioned, a category at one level of abstraction is an attribute at a superordinate level (Bellezza, 1993; Turner et al., 1987). More importantly, the subjective definition of which features are categorical and which are subsidiary attributes should depend again on the comparative context and the perceiver's goals. For example, the same person could categorize himself as an athlete, one of whose attributes is that he is artistic, or an artist whose attributes include athleticism. The designation of which level is categorical would probably be determined by whether the judgment is made in the context of discussions about other athletes or other artists. Subjectively, however, it is unproblematic, because the self will generally be defined in a consistent way within the context of particular social relationships.

Self-perception as social perception

Self-perception and social perception are interdependent because they both arise from social categorizations made in the same contexts (Hogg, this volume, chapter 3). Both reflect the nature of the relationship between the perceiver and the perceived. If targets of perception are judged primarily in terms of a category such as gender, then self is also perceived in terms of gender. Self-inclusive categories are generally defined in contrast with a self-exclusive category (Abrams, 1999; Simon, 1997). Self-categorization theory proposes that online information is integrated with prior expectancies to establish meaningful and functional perceptions of self and others. From this it could follow that category-based processing does not have any special status vis-à-vis individuated or other types of processing, because categorization can occur at any level and because the attributes associated with categories are flexible. In this respect SCT provides a similar model of social cognitive perception to those offered by connectionist approaches (cf., Smith, 1999).

Parallel constraint satisfaction

According to Kunda and Thagard's (1996) parallel constraint satisfaction (PCS) model, perception depends on the parallel operation of excitatory and inhibitory links in a network. When given only category labels as a basis for judgment, the category activates a stereotype, which activates traits and behaviors in the network. However, category information usually arises in combination with other information, such as an instance of behavior. When this happens, the information becomes integrated and may result in different perceptual outcomes. The same trait can also imply different behaviors when applied to members of different groups. For example, lawyers and construction workers are judged to manifest aggressiveness in quite different ways (Kunda, Sinclair, & Griffin, 1995) because the interpretation of aggressiveness is conditional on other features asso-

ciated with each category. Indeed, contrary to earlier models (Brewer, 1988; Fiske & Neuberg, 1990), Kunda and Thagard (1996) concluded that stereotype-based processing is not a default option and that stereotypes have no primacy over individuating information. They reported a meta-analytic effect size of .69 for the effects of individuating information against an effect size of .19 for stereotype information across 40 studies that orthogonally manipulated the two types of information. Consistent with our interpretation of the self-categorization approach, the PCS model does not make strong a priori assumptions about whether particular features will serve as categories or as traits: “. . . many attributes that are typically viewed as individuating information appear indistinguishable from stereotypes, both structurally and in terms of reference class” (Kunda & Thagard, 1996, p. 301).

Many questions are left unanswered by the PCS model. For example, the question of what people notice in the first place, is left to ideas about contextual salience (cf., Taylor, 1981), accessibility (Higgins & King, 1981), or perceiver goals (Brewer, 1988; Fiske & Neuberg, 1990). Similarly, it is unclear how or why people seek to make judgments about others, or indeed the role of the immediate social context. The model is entirely cognitive, requiring no reference to comparisons between target persons and any other external frame of reference. One important missing component is the relationships that people are perceived to share (Abrams, 1992a, 1999). By extending the model to include links between perceptions of others and the self, it can begin to take on a more social flavor.

The meta-contrast process in self-categorization theory shares with the parallel constraint satisfaction model the assumption that the underlying psychological process maximizes the fit of the stimuli to an optimally meaningful model. To the extent that targets are assumed to share traits or descriptive features with one subset of others, but not with a different subset, a categorization should become salient (comparative fit). To the extent that behaviors exhibited by category members are also more similar to one another than to those of non-category members, a stereotype will be generated (see Abrams, 1996, 1999; McGarty, 1999 for further discussion).

The PCS model could potentially be extended to include self-perception. Category, trait, or behavioral knowledge about oneself may be well organized as networks of information (i.e., structures), but the way those are linked to other, more contextually fluid information should have significant effects on self-perception (Abrams, 1999; Kunda, Fong, Sanitoso, & Reber, 1993). We do not regard the context as the only, or necessarily the major, influence (cf. Oakes et al., 1999), but fully endorse the idea that the meaning of self can be transformed by its association and contrast with other concepts and information. Self-categorization theory would hold that this crucial “other information” emerges from social comparisons. These comparisons allow people to build links *to* other individuals through shared social categories. In turn people can make new inferences about themselves from these emergent categorizations. Indeed, categorizations provide a framework for future behavior and self-evaluations. For example, establishing one’s group membership, or category alignment, can often come prior to adopting the group’s values and norms in voting decisions, in pursuing organizational goals, when setting targets for achievement, or when evaluating group members (see Abrams, 1992a, Abrams, Marques, Bown, & Henson, in press; Marques, Abrams, Páez, & Martínez-Taboada, 1998).

The Problem of Individual Variation

We have suggested that self-conception can gain subjective stability and continuity while remaining flexible and dynamic. However, the self-categorization view leaves unresolved the problem of the process by which self becomes stylized, or takes on a personality. What systems or processes enable people to develop character, temperament (Plomin & Caspi, 1999), styles of attribution (Metalsky, Halberstadt, & Abramson, 1987), self-expectancies and efficacy (Bandura, 1982), and strategies for pursuing long-term goals (Brandstadter, Rothermund, & Dillmann, 1998; Heckhausen & Schulz, 1998, Markus & Ruvolo, 1989)? Moreover, self-categorization does not sit easily with a life-span perspective because it does not link the categorization processes to continuity and gradual change over time (Abrams, 1992a). Nor does it provide much insight as to how and why people actively develop or create their own environment within which to develop and complete their sense of selfhood (Wicklund & Gollwitzer, 1982) and in which self-defining goals can persist over a large part of the life span (Gollwitzer & Kirchhof, 1998). These are important issues for future research.

There is good evidence that individual differences affect intergroup behavior. Consistent with research in the interpersonal domain, social identity research has revealed that people engage in strategically self-enhancing or self-protective identification. For example, social identification is stronger when the category is relatively more distinctive (Ellemers, Kortekaas & Ouwerkerk, 1999; Simon, 1993; Simon & Hamilton, 1994) and threats to distinctiveness result in stronger intergroup differentiation (e.g., Brown & Abrams, 1986), particularly among those who identify most highly with the group (Jetten, Spears, & Manstead, 1998). Across a range of domains, people who identify highly are more likely to respond to threats to distinctiveness or identity with a more competitive orientation than are those who identify less strongly (Ellemers, Spears, & Doosje, 1999). Although much of the focus of most of the relevant research is on responses of ingroup bias (e.g., Doosje, Ellemers, & Spears, 1999; Hinkle & Brown, 1990) the interesting point is that responses to social categorization do vary, and this variation needs to be explained.¹ As examples of some of the issues that need to be understood, this section examines self-regulation, self-esteem, and uncertainty.

Regulation of stereotyping and behavior

Self-categorization theory offers only a single source for perception of and action toward others, namely the prototype associated with a salient self-categorization (Turner et al., 1987). Stereotypical perception and judgment following categorization is regarded as functional because it makes the best sense of the relevant intercategory comparisons by maximizing the differences between, and minimizing differences within, categories. Stereotypes are subjectively "reasonable" expectations about group members, and should not be considered biased or faulty perceptions (Oakes et al., 1994; Oakes et al., 1999). Ingroup stereotypes are often positive, but may also have negative connotations (Branscombe, Ellemers, Spears, & Doosje, 1999; Steele & Aronson, 1995; Tajfel, 1981).

Outgroup stereotypes may contain evaluatively neutral (e.g., Italian people eat pizza), or positive (e.g., Italian people are sociable) content. These positive and negative elements make up part of the overall image of social categories and groups. If perceivers were to selectively reject negative content per se this would disrupt category-based judgment as a whole, and it would become difficult to make *any* coherent judgments of targets.

In contrast to the self-categorization account, there is evidence that people are often uncomfortable with, or try to suppress, social stereotypes (Bodenhausen & Macrae, 1998; Monteith, 1996). Even if stereotypes are part of the “cognitive success” of the perceiver, they may imply actions that might be construed as “social failure,” because people may be concerned not to appear “unreasonable” or out of line (Abrams & Masser, 1998). A social failure such as inappropriately expressing a stereotypical judgment may be a source of embarrassment, and likely to provoke admonishment from others. Prevalent cultural values and norms shape people’s sense of right and wrong (e.g., Lerner & Miller, 1978; Seligman, Olson, & Zanna, 1996; Triandis, 1995). Guilt does seem to be associated with awareness of having made unreasonably negative judgments of others (Devine, Monteith, Zuwerink, & Elliott, 1991; Monteith, 1993; Monteith, Devine, & Zuwerink, 1993). Even people with strong prejudices might feel a need to justify these in some way (e.g., Sears & Kinder, 1971; McConahay, 1983), at least to themselves (cf., Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Billig, 1988; Potter & Wetherell, 1987). However, people may not be vigilant for such judgments unless the context demands that they are so (Monteith, 1996). People may wish to moderate their expressions of prejudice for a variety of reasons, including personal values and social norms (Plant & Devine, 1998). All of this evidence suggests that there is no direct or automatic link between categorization and overt judgment and behavior.

Social self-regulation

The general process by which overt behavior is regulated now seems well documented as a comparison–reference value feedback loop (Powers, 1973). Conscious comparison of one’s thoughts, intentions, or actions with a reference standard seems to depend on self-focused attention (Carver & Scheier, 1981, 1998; Gibbons, 1990; Wicklund, 1975). Bodenhausen and Macrae (1998) assume that stereotypes are relatively well learned, slow to change, and insensitive to people’s personal experiences of different intergroup relationships. To deal with these unwieldy and poorly fitting impressions, the control system somehow locates a much more flexible personal norm or rule which facilitates or inhibits the stereotype and related behavior. Bodenhausen and Macrae (1998) propose that stereotype suppression is more likely when people are self-aware, because they refer to personal standards to filter the output from relatively automatically activated cultural stereotypes.

There are two problems with the Bodenhausen and Macrae model. First, it does not deal with the functional aspect of stereotyping – its flexibility and contextual fit. If stereotypes work well, why should people wish to suppress them? Second, it treats the self only as an observer. As Newcomb (1950) observed, evaluations of self and group are inextricably linked, one being always viewed from the standpoint of the other. Moreover, “the individual not only perceives that he has a certain position in his group; he also directs his behavior toward maintaining it, defending it, or improving it” (Newcomb, 1950,

p. 327). The problem facing researchers is how to combine what we know about social categorization with what we know about behavioral self-regulation (see Abrams & Masser, 1998).

Abrams' (1990, 1994, 1996) social self-regulation (SSR) model offers one approach to the problem. The SSR model distinguishes between identity salience (self-categorization) and attentional focus as distinct elements in behavioral regulation. The categorization process and associated stereotyping are conceived of as generally non-conscious processes that make particular self-categorizations salient. According to the Social Identity model of Deindividuation Effects (SIDE model, Postmes & Spears, 1998), raised salience of group membership and lowered salience of individual identity are sufficient to increase ingroup normative behavior. The SIDE model does not address the role of attentional processes in directing information processing and regulating behavior. The SSR model considers that self-regulation can produce different responses to the same salient categorization, depending on the relevant standard or reference point that is attended to. This assumption is based on the large volume of research into self-awareness and self-regulation (see Carver & Scheier, 1981, 1998).

The SSR model considers four conditions: high versus low identity salience, and high versus low self-attention. When both identity salience and self-attention are low, behavior is likely to be task-focused (e.g., toward a previously activated goal), or routine or inactive. In highly ambiguous situations or when routine is interrupted by an external event or stimulus, people may begin to devote their attention to determining the category memberships of targets, or analyzing their individual features (Abrams, 1990, 1994; Hogg & Abrams, 1993; Hogg & Mullin, 1999). That is, they may seek to establish a relevant self-categorization. Increased self-attention may also lower attentional capacity for processing information about others (Vallacher, 1978). Therefore, when category memberships are already clear, self-attention may increase the use of heuristics or simple assumptions, reducing differentiation among targets (Fenigstein & Abrams, 1993). This could increase the impact of stereotypical perceptions on behaviors and judgments.

The attentional process generally is oriented with respect to a particular goal. Because particular goals, standards, or motives can differ, so too can the consequences of self-attention. When social identity is salient, self-focused attention can result in increased intergroup discrimination (e.g., Abrams, 1985), perhaps in the service of a motivation to enhance a valued aspect of self. However, if interpersonal norms are used as the reference standard, the combination of salient social identity and self-attention may result in reduced intergroup discrimination and increased socially desirable responses (Abrams & Brown, 1989; Froming & Carver, 1981). In summary the behavioral consequences of self-awareness depend on: (a) the aspect of self which is salient; and (b) the standards being used to guide behavior. When social identity is salient, self- (ingroup-) serving motives and generic and specific social norms may represent different subsets of the potential reference values for responding.

The context, in the sense of the current situation and set of relevant goals, also provides normative structure for judgment and behavior. If the context invites application of a relatively simple and undifferentiated cultural stereotype, self-focus should increase its use as the reference value for behavioral options that could follow. For example, in the presence of consistent normative information from other ingroup members, stereotypes and ingroup favoritism are bolstered (Abrams, 1990; Haslam, Oakes, McGarty, Turner,

Reynolds, & Eggins, 1996; Marques et al., 1998; Monteith, Deenan, and Tooman, 1996). However, in many situations, particularly small group contexts, negotiations (Kramer & Tyler, 1995; Stephenson, 1991), or role-based encounters with familiar individuals (e.g., faculty meetings), it is likely that we moderate our behavior tactically and strategically to complete plans or reach longer term goals (Gollwitzer & Kirchhof, 1998). We also respond quite differently to group members that behave in unexpected or unlikable ways, even though we do not doubt that they are ingroup members (Abrams et al., in press; Marques et al., 1998; Marques et al., this volume, chapter 17; Moreland & McMinn, 1999).

Social self-regulation retains the position of the self at the center of perception, consistent both with SCT and with research suggesting the relative primacy of self-related material in cognition (e.g., Aron et al., 1999; Baumeister, 1999; Smith, 1999). For example, given the prevalence of motives for self-enhancement and self-protection, increased self-awareness should often result in increased ingroup bias, and self-other differentiation (see also Simon, 1993, 1997). However, the SSR framework also allows learned knowledge about society to provide a source of normative standards in addition to the default perceptual output of categorization. Thus, the self and others can be categorized flexibly, while at the same time cultural conventions or specific social norms remain available to guide action. Individuals with different personal knowledge (e.g., personal stereotypes) can therefore coordinate easily with one another by referring to common social rules (e.g., customs, mores, etc.) or social representations (Lorenzi-Cioldi & Clemence, this volume, chapter 13). When situations call for subjective stereotypes to be moderated in some way, self-regulation allows them either to be downplayed or expressed as the context requires. The same applies to behavioral choices such as whether to remain in or leave the group: the cultural or normative context provides rules for action in the light of one's salient identity. Different contexts may imply quite different rules for the same self-categorization (cf., Abrams, Ando, & Hinkle, 1998). In conclusion, identity salience does not have a direct route to behavior. Self-regulatory processes intervene to moderate and direct action.

Social Identity and Motivation

Although collective self-conception is grounded in relatively automatic social categorization processes associated with depersonalization, it is also guided by motivational processes and people's specific goals. One motivation relates to self-enhancement, self-esteem, and the pursuit of positive social identity; another relates to epistemic considerations and the pursuit of meaning and subjective certainty.

Self-esteem hypothesis

Much has been written about the role of self-esteem in intergroup behavior (e.g., Abrams, 1992a, 1996, 1999; Abrams & Hogg, 1988; Hogg & Abrams, 1990; Long & Spears,

1997; Oakes & Turner, 1980; Rubin & Hewstone, 1998; Tajfel & Turner, 1979; Turner, 1975, 1999). Tajfel originally proposed, "the need to preserve the integrity of the self-image is the only motivational assumption we need to make in order to understand the direction that the search for coherence will take" (Tajfel, 1969, p. 92). However, when he developed the idea of social identity, Tajfel proposed that social comparison processes in intergroup settings are designed to attain "positively valued distinctiveness from other groups" (Tajfel, 1972, p. 3), and to "achieve a satisfactory concept or image of the self" (Tajfel, 1974, p. 4). Tajfel and Turner's (1979) formal theoretical statement includes the proposition from social comparison theory that, "individuals strive to maintain or enhance their self-esteem: they strive for a positive self-concept" (Tajfel & Turner, 1979, p. 40). When groups acquiesce to relatively low social status, the "price has been the subordinate group's self-esteem" (Tajfel & Turner, 1979, p. 37). Turner (1981) describes the hypothesis succinctly:

. . . one's self-esteem as a group member depends upon the evaluative outcomes of social comparisons between the in-group and out-group. Since it can be supposed that individuals desire positive self-esteem . . . there is a tendency to seek positive distinctiveness for the in-group in comparison with the out-group. Thus (the) hypothesis is that self-evaluative social comparisons directly produce competitive intergroup processes which motivate attitudinal biases and discriminatory actions. (p. 80)

Abrams and Hogg (1988) derived two corollaries of what they termed "the self-esteem hypothesis." Corollary 1 is that: "Successful intergroup discrimination will enhance social identity, and hence self-esteem." Corollary 2 is that: "Low or threatened self-esteem will promote intergroup discrimination because of the 'need' for positive self-esteem." Evidence for these two hypotheses (e.g., Corollary 1: Lemyre & Smith, 1985; Oakes & Turner, 1980; Corollary 2: Crocker & Schwartz, 1985; Hogg & Sunderland, 1991; Wagner, Lampen, & Syllwasschy, 1986) has been reviewed by Rubin and Hewstone (1998).

Abrams and Hogg (1988; Abrams, 1990, 1992; Hogg & Abrams, 1990) pointed out that tests of these corollaries should examine evaluations of the specific social identity salient in the context in which intergroup behavior occurs, because global self-evaluations may not reflect the particular intergroup comparison under investigation. They also proposed that state, rather than trait, self-esteem should be most relevant. Moreover, since personal and social identities should not be salient simultaneously it should be possible that even someone who regarded themselves as personally fair might have little difficulty in being more "fair" to the ingroup than the outgroup (cf., Insko & Schopler, 1998). However, self-evaluation should be dependent on conformity to distinctive ingroup norms, so that in some situations, where group norms were prosocial and cooperative, social identity would be evaluated more positively if members were more positive toward the outgroup (cf., Jetten, Spears & Manstead, 1998).

Numerous studies and articles have tested the hypotheses directly or indirectly (see Rubin & Hewstone, 1998), explored moderating factors (Ellemers, Spears, & Doosje, 1999), or criticized the hypotheses (Abrams, 1990, 1992; Hogg & Abrams, 1993) even to the point of denying that the corollaries were ever part of social identity theory

(Farsides, 1995; Long & Spears, 1997). For example, Turner (1999) claims that, "social identity theory does not actually contain these corollaries. In fact in many respects it specifically rejects them. Although the theory assumes that there is a need for positive self-evaluation, it does not equate this need with an individual level motive" (p. 24). "Self-esteem is an outcome of a social psychological process of self-categorization and social comparison in the context of group values and ideologies, not a fixed universal or biological structure" (p. 25). We have always agreed that self-esteem is a social psychological phenomenon and not a universal or biological structure, but we believe a close reading of social identity articles during the 1970s and 1980s does confirm that self-esteem is specified in social identity theory as an important motivator and outcome of intergroup behavior.

Regardless of hair-splitting about the actual hypotheses, we hold to our view that: "In real group contexts the SEH may merely be one of a great many possibilities concerning the motives for intergroup discrimination" (Abrams & Hogg, 1988 p. 323; also see Abrams, 1992 for a detailed exploration). For example, when differences among groups are institutionalized and ideologically legitimized, it seems likely that groups will accept the status quo without particular consequences for self-esteem, particularly for the higher status group. Intergroup behavior in real settings is often based on factors such as the distribution of wealth or power (Ng, 1982), material resources (Caddick, 1981), the nature of goal relations between groups (Sherif, 1966). Under some circumstances, positive self-evaluation might follow merely from engaging in behavior as a group member, perhaps as a product of a sense of efficacy (Gecas & Schwalbe, 1983).

Research has also tended to support Abrams and Hogg's (1988) prediction that chronic or well-learned self-evaluative tendencies can pervade some aspects of intergroup behavior. For example, individuals with low self-esteem might be psychologically less well equipped to engage in competitive intergroup behavior for both cognitive and motivational reasons (cf., Alloy & Abramson, 1982; Beck, 1967). Conversely, people with very high self-esteem might well seize opportunities to accrue more positive self-evaluations through intergroup comparison (Crocker, Blaine, & Luhtanen, 1993; Crocker & Major, 1989; Luhtanen & Crocker, 1992). The picture is complicated by evidence that self-esteem at both personal and group levels may affect intergroup behavior (Long & Spears, 1997). Social categorization may be threatening to people with low category related self-esteem and for people with high personal self-esteem. Long and Spears (1997) found that these participants showed the highest levels of intergroup differentiation. As noted earlier, in some situations people seem to prefer positive evaluations first, and accurate information second (Sedikides, 1993). It seems likely that the self-system would function in similar ways regardless of whether self-evaluative judgments are made from interpersonal or intergroup social comparisons.

Rubin and Hewstone's (1998) review divided self-esteem measures into trait, state, global (all aspects of self), specific, personal, and social aspects of self. They also distinguished between competitive discrimination (in which outcomes or status were at stake in the absence of clear norms, such as in the minimal group paradigm) and normative discrimination (in which there is an historical or normative basis for discrimination). They expected clearest support for the SEH for competitive discrimination when measures focused on specific social state self-esteem. The evidence is at best inconclusive. A higher

proportion of studies supported the first than the second corollary, but very few met the criteria for measurement of self-esteem required to test the corollaries properly. For example, Hogg and Sunderland (1991) manipulated personal self-esteem before participants awarded points to minimal ingroup and outgroup members. Those with lowered pregroup self-esteem expressed more ingroup favoritism, but favoritism did not predict postgroup self-esteem.

Gagnon and Bourhis (1996) found that discrimination in minimal groups was associated with subsequent social state self-esteem, but only when participants identified highly with the ingroup. Platow, Harley, Hunter, Hanning, Shave, and O'Connell (1997) found that among participants whose personal self-esteem was high, those with low social self-esteem discriminated more than those with higher social self-esteem. None of the studies reviewed tested both corollaries using specific state social self-esteem measures. Branscombe and Wann (1984) found that threat to the (North American) identity of participants resulted in lowered self-esteem among people who identified highly with the ingroup. Moreover, these participants showed greater derogation of the outgroup and subsequently reported raised self-esteem. Rubin and Hewstone (1998) concluded that competitive discrimination enhances self-esteem but is not motivated by depressed self-esteem. In line with Abrams and Hogg's (1988) review, there appears to be moderate support for Corollary 1 but little support for Corollary 2. Indeed, meta-analytically, the evidence stacks up to suggest that people with high global personal trait self-esteem are most likely to engage in discrimination (Aberson, Healy, & Romero, in press). Long and Spears (1997), together with Branscombe and Wann (1994), Farsides (1995), and subsequently Turner (1999) have emphasized that self-esteem becomes more motivating when social identity is threatened, and when the categorization is meaningful and relevant.

One likely reason for the mixed findings in the self-esteem literature is that the processes of measurement may compromise the relationships among the variables (Abrams, 1992a). If a person has just evaluated his/her group membership positively it would seem likely that he/she would want to be consistent in subsequent allocation of rewards to group members. Alternatively, having already evaluated their group positively he/she may feel no further need to engage in discrimination and ingroup bias (Rubin, 2000). Recent developments in measurement such as the Implicit Association Test (Greenwald & Banaji, 1995) and other implicit measures could provide a useful way to access social identity linked self-esteem in ways that may be less susceptible to demand characteristics or reactivity to repeated presentation of the same measures (Farnham, Greenwald, & Banaji, 1999).

Self-meaning

Psychologists have always believed that people are motivated to render their world subjectively meaningful in order to be able to predict events, plan action, and generally act in an adaptive manner. This assumption has a variety of different emphases on simplification, meaning, certainty, and so forth (see Bartlett, 1932; Festinger, 1950; James, 1890; Reykowski, 1982). Many formulations also emphasize individual differences in the degree

of uncertainty that people can tolerate (e.g., Adorno et al., 1950; Rokeach, 1960; Sorrentino & Roney, 2000). A central motivation as a group member could be to establish the meaningfulness of one's identity (Abrams & Hogg, 1988; Hogg & Abrams, 1990).

This is an important theme in Tajfel's earlier (1969, 1972) theorizing. People are likely to be in a position to satisfy higher order needs such as self-enhancement only once they can make subjectively valid comparisons. The first task, therefore, is to understand who one is (Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990). This subjective reference point provides the basis for evaluations and reactions to others (see also Marques et al., this volume, chapter 17; Abrams et al., in press). In short, clarification of the social world and one's linkage to it is the starting point for other self-related processes. The question, "who am I?" precedes the question, "how good am I?" (Abrams, 1990, 1992a). Intertwined with the answer to the latter question will be the value associated with social identity (Sherman, Hamilton, & Lewis, 1999), and the affect associated with different cognitions about ingroup and outgroup members (Smith, 1999).

Uncertainty reduction hypothesis

The idea that uncertainty reduction is a fundamental motivation has been explored and elaborated as the uncertainty reduction hypothesis (e.g., Hogg, in press a, in press b; Hogg & Abrams, 1993; Hogg & Mullin, 1999; also see Hogg, this volume, chapter 3). Although people may vary in uncertainty orientation, there is also substantial variation caused by immediate or more enduring contextual factors. According to the uncertainty reduction hypothesis, we all feel uncertain sometimes, and need to reduce this uncertainty. A powerful way to do so is to ground one's self-concept in group membership. Groups are represented as prototypes that describe and prescribe perceptions, attitudes, feelings, and behaviors (see Hogg, this volume, chapter 3). Social categorization allows a complex and multifaceted social field to be reconfigured in terms of ingroup and outgroup prototypes. When a social category is self-inclusive, the self becomes depersonalized, and thereby assimilated to the ingroup prototype. This gives direction to self-conception and associated attitudes, feelings, and behavior. Furthermore, collective self-conception provides consensual validation from fellow ingroup members for one's identity and associated attitudes, feelings, and behaviors.

Theoretically, the more uncertain one is the stronger is the motivation to self-categorize. Moreover, the motivation should be stronger if one is uncertain about something that is subjectively important in that context; for example, the self-concept or attitudes related to self-conception. It is also likely that, under uncertainty, people seek to identify with groups that are more effective at reducing uncertainty. Such groups would be expected to have consensual, concise, and clearly focused prototypes that are grounded in distinctive, highly entitative groups. This point can be taken one step further to predict that extreme uncertainty may motivate people to join extremist groups that are orthodox, homogeneous, polarized, hierarchically structured, and have clear rules or norms.

There is now a body of empirical studies that provides support for key predictions of the uncertainty reduction hypothesis, in particular the key idea that people self-categorize in terms of an available self-inclusive category only when they are motivated

to do so by uncertainty, and that this effect is amplified where the focus of uncertainty is important and the social category is relevant to self-conceptualization and uncertainty reduction (e.g., Grieve & Hogg, 1999; Hogg & Grieve, 1999; Jetten, Hogg, & Mullin, in press; Mullin & Hogg, 1998, 1999; for overviews see Hogg, in press a; Hogg & Mullin, 1999). Uncertainty reduction follows from the perception of ingroup consensus (e.g., McGarty, Turner, Oakes, & Haslam, 1993). Whether uncertainty reduction or self-esteem motives operate as hierarchical or as parallel processes remains an interesting empirical question (see McGarty, 1999).

Conclusions: The Self is a Social Entity

Mackie and Smith (1997) reviewed the literatures on interpersonal and intergroup processes and concluded that many of the theories and models share common assumptions. There does seem to be a trend toward integrating and sharing insights across different domains in social psychology (Stapel, 2000). There has also been a surge in the proportion of social psychology that is concerned with collective phenomena, defined broadly as ranging from stereotyping to small group interaction and intergroup behavior (Abrams & Hogg, 1998). There are still important debates regarding the underlying level of analysis (e.g., Gaertner & Schopler, 1998; Oakes et al., 1999, Turner, 1999). However, ideas and techniques from branches of research that have traditionally been characterized as being at opposite extremes of the non-reductionist–individualistic continuum (such as social identity and social cognition) are now being shared and used to develop fuller theoretical accounts of important social phenomena (Abrams & Hogg, 1999; Lepore & Brown, 1997; Locke & Walker, 1999; Operario & Fiske, 1999; Vescio, Hewstone, & Crisp, 1999). We believe that this openness can produce better understanding of the way society and psychology are articulated, perhaps especially through the medium of the self.

Our view is that society and the individual are mutually instantiated (Abrams, 1992a; Abrams et al., 2000; Hogg & Williams, 2000). Theologians and poets have understood this point for centuries and some sociologically inclined psychologists reached similar conclusions half a century ago (e.g., Newcomb, 1950; Sherif, 1936). We believe that this conclusion is gradually being reflected not just in a corner of the discipline, but as change in the meta-theoretical framework (Doise, 1986; Operario & Fiske, 1999). The combination of a social identity perspective with models of social cognitive, interpersonal, and intergroup processes offers hope for achieving a better understanding of the truly social nature of the self.

Note

- 1 One way that self-conception may gain stability is when particular social comparisons are made relatively frequently and with richness of meaning and because people have enduring relationships within social networks (Simmel, 1922). For cognitive and affective reasons, this would increase the relative accessibility of the relevant self-categorizations. However, this rea-

soning begins to imply the presence of structural stability, which in turn leads to a “personality” explanation for intergroup behavior, which is anathema to many social identity theorists (e.g., Turner, 1999).

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CHAPTER NINETEEN

It Takes Two to Tango: Relating Group Identity to Individual Identity within the Framework of Group Development

Stephen Worchel and Dawna Coutant

A favorite childhood story is Hans Christian Andersen's tale of the Ugly Duckling. For those whose memories have faded, the story recounts the perils of an ugly fowl whose characteristics set him apart from his siblings. This unsightly bird just did not fit in with the flock. He was criticized, rejected, and mistreated. However, as time passed and the ducklings matured, the ugly duckling grew into a beautiful swan, becoming the envy of all his peers.

In many respects, this has been the fate of "the group" in social psychology. With its focus on the individual, social psychology has had a difficult time accepting the group as a true member of the flock. Although the group has been a part of social psychology since the field's beginning (Triplett, 1898), it has occupied a rather tenuous position. Social psychologists have scoffed at the notion of a "group mind" (Le Bon, 1895/1960). Allport (1924) observed that nobody ever tripped over a group, an insult questioning the very existence of the group. The rejection of the group became so complete that Steiner (1974) entitled an article, "What ever happened to the group in social psychology?" For a time, the group was banished to the foreign lands of organizational psychology and sociology.

But the group could not stay a stranger for long. It wormed its way back into the fold, but its rebirth had a unique twist. Early definitions of the group described it as a unit consisting of several individuals who interacted with each other and occupied "real" space (Shaw, 1981). However, the born-again group was accepted into the domain of social psychology only as a cognitive representation, a figment of the mind. Instead of the individual being in the group, the group was now within the individual; Hogg and Abrams (1988) stated that "the group is thus within the individual . . ." (p. 19).

The cognitive flavoring applied to group research had profound effects on the methodological and theoretical approaches to the study of group dynamics (Abrams & Hogg, 1998;

Moreland, Hogg, & Hains, 1994). Rather than examining the individual's behavior in the group context, much of the newer research investigated how individuals perceived the group, formed impressions about group members, and, most importantly, incorporated the group into the representation of the self (Hogg & Abrams, 1999; Turner, 1982). Although there is ample reason to lament the de-emphasis of behavior, the cognitive focus opened some exciting new vistas for study. Henri Tajfel and his associates (Tajfel & Turner, 1979; Hogg & Abrams, 1988) gave "the group" a starring role in the drama of the formation of the individual's identity. They argued that there are two foundations on which this identity is built. One is personal identity, which includes the unique personal characteristics of the single individual. The other is social identity, the memberships the individual claims in various groups. Individuals, it was argued, strive to maintain a positive social identity. Much of this striving occurs through the process of social comparison (Festinger, 1954). Comparisons involving social identity motivate individuals to enhance the position of their ingroup relative to outgroups.

Social identity theory (SIT) gave rise to a rich and broad tradition of research (see Rubin & Hewstone, 1998; Worchel, Morales, Páez, & Deschamps, 1998; see also Abrams & Hogg, this volume, chapter 18; Hogg, this volume, chapter 3). Attention was focused on how individuals categorize their social world into ingroups and outgroups (Doise, 1998; Tajfel & Turner, 1979). Other research examined the nature and process of intergroup discrimination, delving into the conditions that lead to the elevation of the ingroup, discrimination against the outgroup, or both (Brewer & Miller, 1984). SIT became the springboard for new approaches to understanding stereotyping (Haslam, Turner, Oakes, McGarty, & Hays, 1992; Ng, 1989; Spears, Oakes, Ellemers, & Haslam, 1997), prejudice (Bagby & Rector, 1992), ethnic violence (Worchel, 1999) and other forms of intergroup relations. The perspective was applied to a host of traditional social psychological issues such as interpersonal perception (Park & Rothbart, 1982), minority influence (Clark & Maass, 1988), and group productivity and social loafing (Worchel, Rothgerber, Day, Hart, & Buttemeyer, 1998).

From Inside the Head to Inside the Group

There can be little argument against the position that individuals develop and hold mental representations of groups and that groups play an important role in the individual's identity. However, groups are not merely entities within the file drawer of the mind. Groups are physical realities that dot the social landscape like trees in a dense forest. Groups have form (social and physical boundaries) and structure (roles and norms) and they have a history. Indeed, groups often survive long after the original members have turned to dust. Our recent work on ethnic identity found that many people spend considerable energy searching for the physical markers that demonstrate the roots of their ethnic groups (Worchel, 1999). The very soil from which the ethnic group sprang becomes sacred ground that is often the source of violent and protracted human conflict. The history of the group is often the justification used to legitimize the group's existence and its behavior (Bar-Tal, 1990). Groups often go to considerable lengths to construct their histories.

Indeed, it is the group's history that often forms its identity, and, consequently, the identities of the members of the group. Just as the group is within the individual (Hogg & Abrams, 1988), the individual is within the group, occupying both physical and social space.

The acceptance of the group as a structure that embraces the individual has important implications for personal identity, group perceptions, and intergroup relations. These implications complement rather than compete with the positions taken by social identity theory and self-categorization theory. Indeed, we will argue that viewing groups as dynamic units and studying the interpersonal behavior that occurs within and between groups will lead to a better understanding of, and more accurate predictions about, individual identity.

Expanding the Foundation of Personal Identity

Social identity theory presents individual identity as a point along a continuum ranging from personal identity on one end to social identity on the other end. One's identity at a specific time is represented by a single point on the continuum. A multitude of variables affect whether personal identity or social identity will be most salient, and which of the many group memberships will be most prominent on the social identity side of the equation. The conceptualization of social identity as being composed of group membership leads to the hypothesis that people discriminate in order to enhance the position of their ingroups relative to that of outgroups. The motivation behind this action is to create a positive social identity (Tajfel, 1978), reduce threats to self-esteem (Hogg & Abrams, 1990; Long & Spears, 1997), or reduce uncertainty (Hogg, 2000; Hogg & Abrams, 1993).

We (Worchel, Iuzzini, Coutant, & Ivaldi, 2000) recently offered an expanded model of individual identity. We suggested that there are actually four, rather than two, components that form identity. One component is *personal identity*, agreeing with the SIT model that this dimension includes an individual's specific physical and personality characteristics. A second component, which we labeled *group membership*, encompasses the social identity end of the continuum offered by SIT. Group membership includes the representation (categorization) of the social world into groups and information about membership in these groups (ingroup and outgroup). To this dimension, we added the suggestion that one's social identity is as much about the groups to which one does not belong (outgroups) as the group to which one does belong (ingroup). The third component in our model is *intragroup identity*. This factor recognizes that individuals reside within groups and occupy positions within those groups. The data that comprise intragroup identity include the status and role one has within a group and the relationship one has with ingroup members. This component is similar to, but broader than, the concept of "member esteem" (person's perception of his or her performance in the group) proposed by Luhtanen and Crocker (1992).

The final dimension, *group identity*, recognizes the need of the group to develop an identity of its own. The identity includes the group's boundaries, its beliefs and values,

its history, and its reputation within the wider domain of groups. For example, a group's reputation may be conservative, aggressive, supportive, or rigid. This reputation is often portrayed in the symbols the group uses to represent itself. Once formed, groups strive to maintain this collective identity, often pressuring individual members to support and represent this identity. Several investigators have flirted with the existence of a group identity. Bar-Tal (1990) evokes the concept of "group belief" in suggesting that a common belief or attitude can reside within the group. Luhtanen and Crocker (1992) propose a "public collective self-esteem" (regard for the group held by non-members) that clothes a group like a large shroud. Suggesting that the group pressures individuals to uphold a group identity is a departure from the SIT position that views individuals as manipulating groups to serve their individual identities.

We suggested that rather than a single continuum running from personal identity to social identity, individual identity operates at all levels simultaneously. That is, each of the four dimensions has its own continuum ranging from high to low salience. Salience, in this case, refers to the degree of prominence or awareness accorded to a particular dimension at a specific time. The degree of salience of any one dimension is orthogonal to the salience of any other dimension. Therefore, the individual's identity at any single point of time is made up of contributions from each of these dimensions. For example, a Japanese student visiting an American university commented on the difficulty of dealing with the facts that: (1) she was physically distinct from others (personal identity); (2) she was Japanese (group membership); (3) she came from a wealthy Japanese family which implied that her performance should be superior to other Japanese students (intragroup identity); and (4) at the particular time, Japan was very concerned about presenting itself as a country concerned with women's rights (group identity). The student was always aware of each of these dimensions and her behavior was influenced by all of them. However, the student stated that her intragroup and group identities were most salient when she was with her Japanese friends. When she was in a mixed group of American and Japanese students, all of the dimensions were very prominent for her. Worchel et al. (2000) suggested that there may be times when all four dimensions are highly salient, only some dimensions are highly salient, or none of the dimensions are salient. In the latter case, the individual's behavior will be most strongly affected by variables outside the identity, such as environmental conditions. However, when one or more identity dimension is salient, behavior will be influenced by internal (identity) factors.

Our approach gives the group a clear role outside the cognitive structure of the individual. Although we do not deny that individuals hold mental representations of groups and that these representations can and do exert influence, we also argue that groups are entities that exist outside the person and exert real pressure. We suggest that group dynamics has interpersonal and intergroup components that cannot be ignored in the study of the relationship between individual and group. Although group activities have an impact on the identity of the individual member, the group must be examined within a true social paradigm.

One further point is worth mentioning here. Although SIT builds its base within the mind of the individual, it is largely concerned with intergroup relations. In this sense it is largely, although not exclusively, unidirectional. It argues that the well-spring of intergroup behavior lies deep within the individual's concern with individual identity. This,

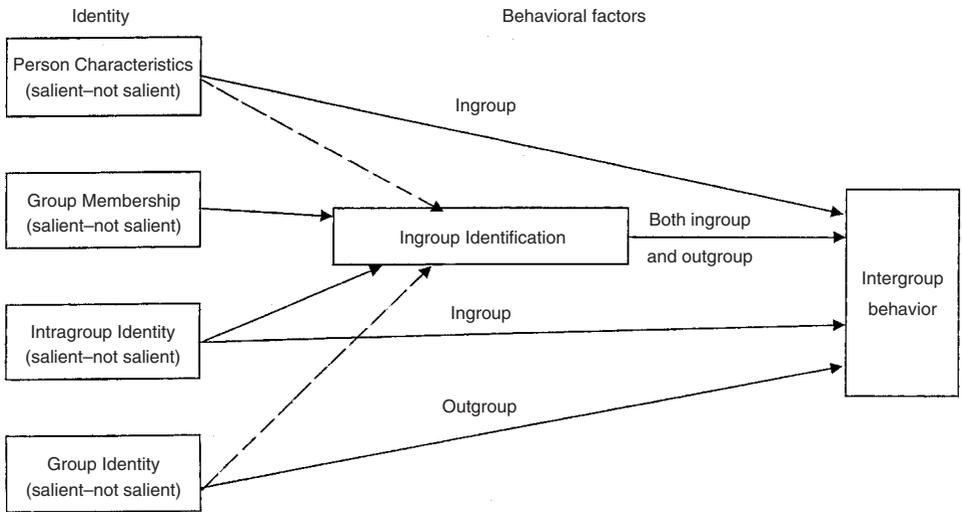


Figure 19.1. Components of individual identity and their influence on intergroup behavior.

however, may not always be the case. Our model suggests that in addition to this pathway, intergroup behavior may result from a group’s concern with its own identity, thereby bypassing direct influence from members’ concerns with their own identities. In other words, individuals may react against an outgroup solely to protect their ingroup, without concern for the self. Indeed, it is not difficult to find examples where groups encourage (demand) members to put aside personal identity concerns in order to serve group goals. One is reminded of President John F. Kennedy’s famous request, “Ask not what your country can do for you; instead ask what you can do for your country.”

Worchel et al. (2000) used the four-dimension model of identity to address the perplexing issue about the route that group discrimination will take (Brewer, 1979; Hinkle & Brown, 1990; Mullen, Brown, & Smith, 1990). The relative position of the ingroup can be enhanced by: (1) directly favoring the ingroup; (2) depreciating the outgroup; or (3) employing both behaviors. Determining exactly which route will be chosen has been the topic of considerable research. Worchel et al. (2000) suggested that one of the factors that determines the nature of intergroup discrimination will be the dimension(s) of identity that are salient at the time of behaving. As seen in Figure 19.1, discrimination will involve enhancing the ingroup position when Person Characteristics are most salient. On the other hand, increasing the salience of the Group Identity dimension will motivate responses aimed at depriving the outgroup. And when Group Membership is highly salient, discrimination will involve behavior directed at both the ingroup and the outgroup, and the level of identification with the ingroup will moderate the intensity of these actions. Evidence for these effects comes from studies designed to have individuals focus on various aspects of their identity before responding in an intergroup situation.

With these points in mind, it is important to explore the factors that influence the salience of each dimension of identity. We can begin this exploration by examining a factor that affects both individual identity and intergroup behavior: group development.

The Pattern of Group Development

Even while accepting the dynamic nature of groups, traditional social psychology has often presented groups as a fixed stage on which individual behavior grabs the spotlight. Individuals act while the group supplies the context. Groups, like loving parents watching their children in the playground, sit passively by without response or change.

This representation of groups has been periodically questioned by investigators over the last 50 or so years. A coordinated challenge arose from the t-group movement that was initiated by Kurt Lewin. The students of t-groups viewed the group as the star of the show, carrying along individual members like flotsam in a raging river. Groups, they argued, develop and change in predictable ways as if following a predetermined script. Tuckman (1965; Tuckman & Jensen, 1977) identified five stages of group development (forming, storming, norming, performing, and adjourning) and described the members' behaviors associated with each stage. Several other investigators (LaCoursiere, 1980; Mullen et al., 1992) have offered models of group development, each suggesting that groups are dynamic entities that follow a developmental pathway, even as group members enter and leave the group. Moreland and Levine (1982; see Levine, Moreland, & Choi, this volume, chapter 4) took this dynamic approach a step further by pointing out that individual membership within a group undergoes a series of transitions. Hence, both members and groups follow scripts, albeit separate scripts. These models argue that groups are more than cognitive representations carried by individuals. In fact, they suggest that groups can move along their path of appointed destiny quite independent of the development process of individual group members.

Using this work as a starting point, we (Worchel, 1996; Worchel, 1998; Worchel, Coutant-Sassic, & Grossman, 1992; Worchel, Coutant-Sassic, & Wong, 1993) studied a wide variety of groups ranging from small laboratory groups to large social movements. We, too, observed predictable patterns in group development, but we found that these patterns were often repeated during the life of the group. Group development, we observed, occurs through a series of repeated cycles, rather than by the linear track proposed by other models. Our model has been discussed in detail in several previous publications, so only a brief review is now in order. Our observations suggested that once group members have been selected, groups begin a stage of *group identification*. The goal of this stage is to establish an identity *for the group*. The group focuses on establishing clear boundaries, often seeking competition with other groups (Worchel et al., 1993). The group avoids accepting new members. There are strong pressures for conformity and members often adopt a group uniform. Groupthink (Janis, 1982) is common. Dissenters are punished and/or rejected. The norm of equality is adopted and little distinction is made between members. In fact, deviants are rejected and minorities have little influence

(Worchel, Grossman, & Coutant, 1992). There is a high state of emotional excitement and information processing tends to be peripheral (Petty & Cacioppo, 1986).

Once group identity has been established, the focus turns to *group productivity*. During this stage, the group's attention centers on defining goals and developing plans to reach those goals. Groups are often most productive during this stage (Worchel et al., 1992). Distinctions between group members are made on the basis of task-related skills and experiences. Group members become more analytical in their approach to issues and central processing of information predominates (Petty & Cacioppo, 1986). New members are invited into the group, but membership is based on their task-related skills; these workers often hold a more marginal status than older members do. The group is less likely to seek competition with outgroups, but social comparison between groups takes place.

The *individuation* stage that follows is characterized by a decided shift in focus within the group. During the group productivity phase, the group often accumulates resources. Now, members direct attention toward how these resources should be divided. Individuals attempt to establish their own unique identity within the group. Comparison between group members is prevalent, and individual members make their claims on the group resources. The norm of equity rather than equality is emphasized. Differences between group members become salient. Individuals begin to explore membership opportunities in outgroups, and they use these opportunities to establish their "worth" within their group. Leadership becomes fragmented and decentralized. Social loafing is common and individuals demand direct compensation for contributions to the group.

The disintegration of the group continues into the stage of *decay*. At this point, members may defect from the group. Scapegoating takes place and leaders are often blamed for group ills. The individual focus is accelerated, and the need for the group is questioned.

In some cases, the decay destroys the group and it ceases to exist. However, in many other cases, the group, albeit with a different set of members, begins the process of rebuilding. A distinct incident or threat may ignite the rebirth, or the rebuilding may be initiated by the collective actions of a subset of the members. Whatever the reason, the group enters again into the *group identification* stage, and the cycle of group development begins anew.

We have identified several triggers that propel the group from one stage to the next (Worchel, 1996). One such trigger appears to be success in reaching the goal of the stage. For example, when group members feel that they have clearly established the identity and independence of their group, the group moves from the *group identification* phase to the *group productivity* phase. Likewise, the accumulation of resources during the *group productivity* phase invites the *individuation* stage. Interestingly, a second trigger seems to be the failure to reach a goal. Groups that fail to establish consensus on group identity may turn attention toward productivity issues. And the failure to reach productivity goals may excite members to individuate themselves, taking what they can from the group and seeking a safe haven. Although moving the group to a new phase, failure in one stage generally presages difficulties in the next phase. A third motivator for change may be simply the weight of time. In several of the groups that we examined, there seemed to be a collective decision that "we have spent enough time on this issue," and it is time to

move on to another issue. Finally, threat plays an interesting role on group development (Rothgerber, 1997). A threat to the group as a whole tends to move the group into the *group identification* stage, regardless of when this threat occurs. Indeed, wily leaders often use the impending danger of an outside group to ignite ingroup concerns with identity. However, if the threat is directed toward individual members, *individuation* may occur. This is especially likely when the threat arises from within the group. For example, an individual who feels that his or her membership within the group is responsible for a personal hardship may seek redress and personal recognition from the ingroup.

Although the model identifies discrete stages, the boundaries between the stages are often fuzzy, characterized more by an emphasis of concern than by a focus on only one issue. These fuzzy boundaries are especially prevalent when the group is moving from one stage to another. Further, the impact of threat demonstrates that the order of progression from one stage to the next is not necessarily fixed. Events may occur that propel the group to leap over stages, either forwards or backwards. There is, however, a most likely course that will be followed.

Earlier publications offered support for the model and the impact of group development on productivity (Worchel et al., 1992; Worchel et al., 2000), intergroup relations (Worchel et al., 1993), leadership (Worchel, Jenner, & Hebl, 1998), and stereotyping (Worchel & Rothgerber, 1997). Therefore, let us examine how group development relates to group and individual identity as well as targets for social comparison. The central theme of this discussion will be that group development has a profound influence on both the formation of identity and on social comparison. And although both are cognitive processes, they are molded and shaped by the dynamic social aspects of groups.

Group Development and the Standard for Social Comparison

One of the most universal of all social behaviors involves comparing oneself with others. Whether the mirror is on the wall or within the social environment, humans spend time and energy searching for their reflection. Charles Horton Cooley (1902) referred to this tendency in coining the term “looking glass self.” And Festinger (1954) placed the process center stage in his social comparison theory. In its original form, social comparison theory was elegantly concise and straightforward. Festinger argued that there are many aspects of the self that are not reflected in the mirror on the wall. In many cases, information about the self is reflected in social reality, which can only be defined by comparing with other people. Comparisons, however, are not conducted in a random fashion. We tend to compare with others who are similar to us on relevant dimensions. There have been numerous efforts to improve and refine the theory (Tesser, 1988), but the basic positions have remained and received considerable support (Suls & Wills, 1991).

Although social comparison theory has been invited into many domains of social psychology, one of its most important roles has been in social identity theory (Hogg, in press). Tajfel and Turner (1986) argued that people desire to hold the most positive social identity possible. One step toward this goal is to elevate the relative position (status) of one's ingroup relative to that of outgroups. At the foundation of this jockeying for supe-

riority is the process of social comparison. Individuals compare (and manipulate) the position of their ingroup with that of the outgroup. The result of this process is played out in the intergroup arena, the heart of SIT.

If we compare the treatment of social comparison in Festinger's presentation of the theory and Tajfel's use of it in SIT, an interesting paradox seems to emerge. Festinger argues that we seek similar others with whom to compare. Who should be more similar to a group member than other members of his or her ingroup? Turner and his colleagues (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) state that the self-categorization process involves carefully placing similar others in the ingroup category, and relegating those who are viewed as dissimilar on important dimensions to the outgroup. This suggests that comparisons should be focused within the group, creating competition and a struggle for relative advantage between group members. However, social identity theory implies that social comparison takes place between individuals in different groups, leading to intergroup competition and conflict.

The situation seems to demand a duel between the two theories to determine which is correct. We suggest that no duel is, in fact, necessary. Indeed, both theories are correct. Worchel et al. (2000) argue that individuals engage in simultaneous comparisons with ingroup and outgroup members, and that several factors influence which comparison is most salient. We propose that one of the most influential factors that determines the target of social comparison is *group development*. The developmental stage of the group influences whether individuals will be most interested in comparing with outgroup members or with fellow ingroup members.

As the earlier discussion of the group development model indicated, the *group identification* stage is characterized by efforts to create a group identity. Equality between members is stressed, as is conformity. The group is concerned with establishing clear boundaries between the group and outgroups. This is the phase where members are likely to adopt a common group uniform, symbol, or mannerism. Each of these activities should discourage comparisons with and distinctions between ingroup members, and encourage comparisons with outgroup members. Therefore, we would predict that the intergroup comparisons offered by social identity theory should be most evident during the *group identification* stage of development.

On the other hand, the focus of the group during the *individuation* stage turns inward, within the ingroup. At this point, members are concerned with establishing their unique position within the group. They desire to make their claim for group resources and/or group recognition. Equity is the predominant group norm. The demand for equity requires that group members distinguish themselves from other ingroup members. Therefore, the most important comparisons are those that occur within the ingroup. It should also be expected that the search for similar ingroup members to use as standards will be especially salient. In other words, individuals will not only look within the group for standards of social comparison, but also they will focus on comparing themselves to members who have equal tenure, comparable skills, and who have made similar contributions to the group.

At this point, the support for these hypotheses is admittedly incomplete, but it is intriguing. In a longitudinal study of ongoing laboratory groups, Worchel et al. (1993) asked group members several questions about the relationship they preferred to have with ingroup and outgroup members. As Figure 19.2 shows, during the early phase of the

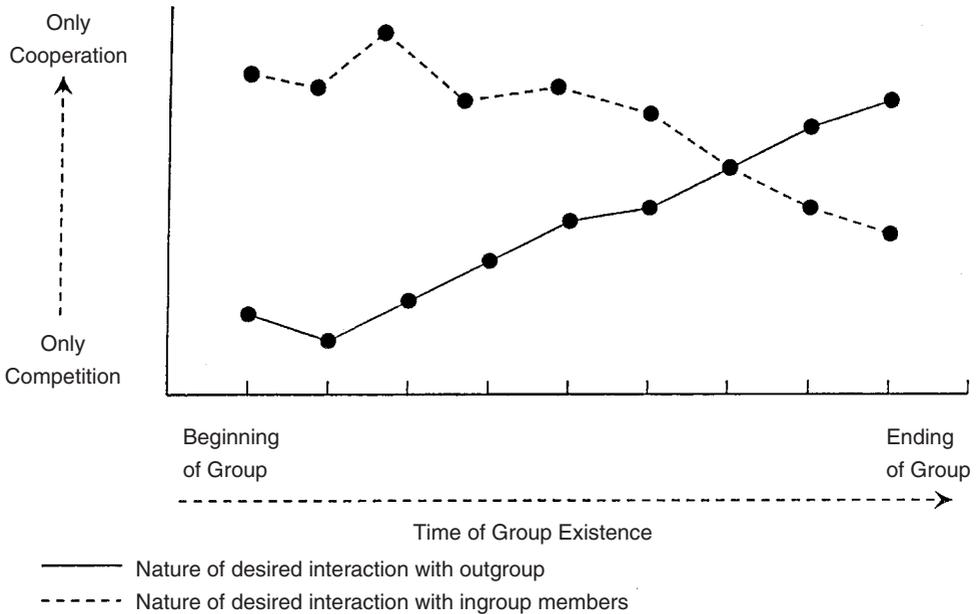


Figure 19.2. Impact of group development on desired relationship with the ingroup and outgroup.

group, members desired competition with the outgroup and cooperation within the ingroup. However, toward the end of the group's existence preferences had changed dramatically to show that members wanted competition within the ingroup and cooperation with the outgroup. Several investigators (Festinger, 1954; Goethals & Darley, 1987) have pointed out that competition offers opportunities to make social comparisons. Competition often clearly delineates a winner and a loser and invites a comparison of skills between the opponents. Social comparisons within a cooperative interaction are more difficult to make. In these cases, individuals generally combine efforts, often contributing to the final product in very different ways. Cooperation blurs the boundaries between the participants while competition sharpens these boundaries.

In another study (Worchel et al., 2000), students in a class setting were asked whether they preferred to see the distribution of test scores for their own class or for other classes taking the same test. Overall, there was a strong tendency for students to request the distribution of their own class, suggesting a desire for comparisons within the group. However, the preference for ingroup distributions was greater for tests given late in the semester than on early tests. Although these data did not deal explicitly with the social comparison process, they are consistent with the position that group members desired information that would allow outgroup comparisons during the early class periods and ingroup comparisons later in the group's life.

Relevant to our position is the observation that social identity and self-categorization theories focus considerable attention on the formation of new groups, albeit often in the form of cognitive categories, and behaviors that follow the formation of these groups. For

example, research (Bourhis, Sachdev, & Gagnon, 1994; Tajfel, 1970) employing the minimal group paradigm (MPG) often examines participants' behaviors immediately after new groups (or categories) are created and participants have had no opportunity to interact (Tajfel & Turner, 1986). Our developmental model of groups suggests that this early group stage should focus on group identification, and that comparisons should be made between groups rather than within the group. Therefore, we argue, it is not surprising to find social comparisons and intergroup behavior concerned with the outgroup. On the other hand, research aimed at testing hypotheses derived directly from social comparison theory takes place in a different arena. Although much of the research is interpersonal rather than group or intergroup (Goethals & Darley, 1987; Suls & Wills, 1990), those studies that adopt a group focus often deal with long-standing groups or categories. For example, Tesser (1988) examined preferences for comparisons between close friends (ingroup members) versus strangers. Zanna, Goethals, and Hill (1975) studied comparison between same-sex and opposite-sex groups. The distinction between these categories is well established. It is possible, then, that differences in the preferred standard for comparison found by these two bodies of research may be influenced by conditions of the groups which are involved in each paradigm.

An exhaustive examination of the research in the social comparison and social identity areas is beyond the scope of this chapter (see Hogg, in press). Our aim at this point is to simply raise the possibility that group development can influence the social comparison process. To this end, we suggest that a threat to one's ingroup not only instigates groups to move from one stage to another, but it also influences the target for social comparison. Research on group development indicates that a threat to the group moves the group into the *group identification* stage. For example, Rothgerber and Worchel (1997) reported that disadvantaged groups became increasingly concerned about their identity when they perceived that another disadvantaged group was performing better than their group. Worchel and Coutant (1997) suggested that a similar process occurs in the relationship between nations. A threat by one nation to the identity or existence of another nation gives rise to heightened nationalism and an increase in the number of incidents of patriotism within the threatened nation. One further effect of these threats seems to be the diminution of comparisons within the nation and the increase of comparisons with the threatening nation. Finally, Sheeran, Abrams, and Orbell (1995) found that self-esteem was related to intergroup comparisons, but that a temporary threat (unemployment) to personal well-being instigated intrapersonal comparisons. Taken together, these findings appear consistent with the position that the outside threat leads groups to focus on group identity, which, in turn, invites comparisons with the outgroup.

Group Development and Group and Individual Identity

Relating social comparison to group development allows us to introduce the temporal factor to the broader issue of identity in general. We suggest that the quest for identity takes place at two levels, the group and the individual. Moreland and Levine (1982, 1984; see Levine, Moreland, & Choi, this volume, chapter 4) also stressed the importance of

time in their model of group membership. They argued that individuals go through a series of stages ranging from prospective member to ex-member in their relationship to the group. Each stage is characterized by a specific set of predominant behaviors and by changes in the commitment to the group. Each stage can also be viewed as affecting the way members view themselves, but the exact nature of this relationship has not been fully explored.

Our approach to identity is similar, but decidedly distinct, from that taken by Moreland and Levine. In their model, the group is presented as the context or the field through which the individual member passes. Although they accept that the group may respond differently to the individual as he or she goes through the stages of membership, they do not address the possibility that the group, too, undergoes changes that affect the individual's role and identity. In a sense, their approach casts the group in the role of a spectator watching a butterfly develop through the stages from cocoon to caterpillar to butterfly. The spectator may marvel and be attracted to or repelled by the butterfly at various stages, but the responses are orchestrated by the butterfly. We are proposing that the group is more than an interested spectator in this process. The group, we argue, undergoes a series of predetermined changes, and each of these changes affects the role, behavior, and identity of the individual. The influence of the individual on the group has been aptly represented in research and theory on such topics as leadership (Fiedler, 1978, 1981) and minority influence (Moscovici & Nemeth, 1974). We stress the other side of the coin, the group's influence on the individual. The spectator (the group), we suggest, strongly influences the form taken by the butterfly (the individual).

To understand how the group helps sculpt the individual identity, we refer back to the notion of reflected appraisal (Cooley, 1902). Using Cooley's analogy of the mirror into which individuals gaze to find their identities, we argue that the stages of group development change the nature of the identity mirror. Each stage creates a mirror that emphasizes a different component of the individual's identity. With this picture in mind, let us make specific links between group development stages and the components of individual identity. Recall that we have suggested that there are actually four components to the individual's identity: personal identity, intragroup identity, social membership, and group identity. All of these components exist at any period of time, but the individual's identity is the result of the unique combination of these components and the salience of each.

The initial stage (*group identification*) of group development is concerned with the identity of the group as an entity. There are strong pressures on individual members to focus their attention on building the group's identity and ensuring its independence. During this stage of group development, the individual's attention is guided toward concerns about the group as a whole and its relationship to the outgroup. The individual is the group and the group's identity is the individual's. As a result, the *group identity* and *group membership* components are the most salient parts of the identity puzzle. Individual members view themselves as embodying the group. Further, the identities of the individual members will be very similar within the group, reflecting the group identity itself.

As the group moves into the *group productivity* phase, attention shifts toward identifying and attaining group goals. Group unity is still important, but individual members

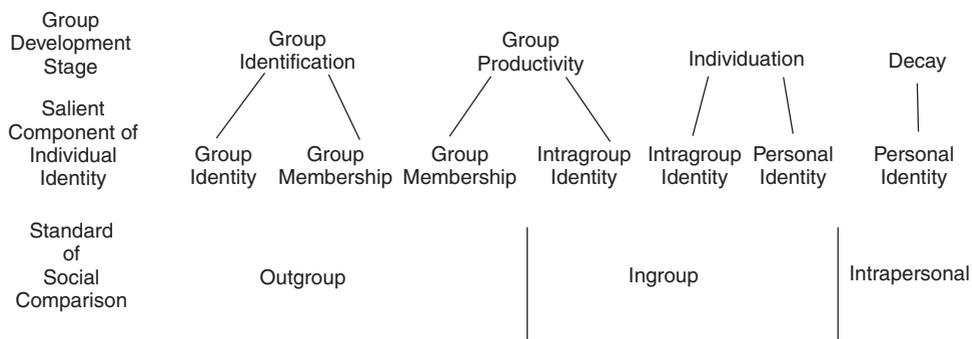


Figure 19.3. Change in the salience of components of individual identity and standard of social comparison as a function of group development stage.

become important to the extent that they can help the group achieve its goals. Their contribution toward group identity becomes less critical. As a result, the group encourages individuals to focus on different components of their identity. At this stage, *group membership* and *intragroup identity* are emphasized by the individual. Self-identity is most strongly determined by the group to which they belong and by the position or role they have within the group. The identity of group members begins to diverge, but the divergence is built around the positions they occupy within the group.

During the *individuation* stage, the nature of personal identity again changes. As Figure 19.3 indicates, events in the group at this point encourage individuals to emphasize *intragroup identity* and *personal identity*. The intragroup identity focus allows members to negotiate their role in the group and a salient personal identity component sets the stage for a possible withdrawal from the group.

During the *decay* phase, we suggest that *personal identity* becomes most salient. As the group disintegrates, it becomes every man, woman, and child for themselves. The group disavows the individual members and the individuals, in turn, seek to distance themselves from the group. The individual's survival is dependent on his or her personal characteristics that are the currency that can be used to buy membership in other groups or gain favor in the existing group. The group condition encourages an egocentric focus, but the focus is on uniquely individual features as opposed to group-based or social features.

Figure 19.3 presents the hypothesized relationship between group development, salience of domains of identity, and social comparison. As can be seen, we suggest that during the initial phase of development, Group Identity and Group Membership are most salient, and social comparisons tend to be made with outgroup members. However, by the *individuation* phase, Intragroup Identity and Personal Identity have become the focus of the individual's attention, and social comparisons are made with ingroup members. Finally, as the group begins to disintegrate, the focus is on the self: Personal Identity is salient and the individual compares his or her present state with both past conditions and desired personal outcomes.

At present, the basis of support for the proposed relationship between group development and individual identity comes from observations of ongoing work groups. Free discussion within these groups has been examined with an eye toward how individuals talk about and present themselves at various stages of group life. These observations showed that individuals do present themselves differently at the various stages and the presentations approximate the relationship we have outlined. If future research upholds this relationship, it has quite dramatic implications for interactions both within groups and between groups. For example, division of resources should show decided ingroup favoritism during early stages of group development. However, during the latter stages, the division of resources should be aimed at favoring the individual, often to the disadvantage of the ingroup. Further, individuals should view themselves as the prototype of the group during the early stages, but see themselves as unique and separate from other group members later in the group.

From Group-to-Individual Identity to Group-to-Group Identity

Up to this point, we have been concerned with how the group influences the identities of its individual members. The focus on individuals maintains our membership in the psychology camp. However, in closing we would like to spend some of our idiosyncrasy credits and expand our focus. We have argued that groups, like individuals, are concerned with establishing their identity. Groups, like individuals, strive for the most positive identity. This identity is critical for attracting and retaining group members, and, therefore, is crucial for the survival of the group (LaCoursiere, 1980). Just as individuals craft their identities from internal (personal) components and social (interpersonal/intergroup) components, we suggest that group identity springs from two sources. One aspect of group identity, like the personal component of individual identity, is internal. This component involves the composition of the group (its members) and its physical attributes (the territory it occupies, its size, its resources, and so on). Groups, therefore, have a strong interest in attracting the most coveted individuals to the group and ensuring that these members reach their potential. The group can bask in the glory of the achievement of individual members. The advances of individual members reflect on the group itself. However, the motivation to maintain group harmony competes with the group's desire to support individual accomplishments. Too great a difference between the achievements and attributes of individual members within the group will create intragroup conflict and jealousy between group members. As a result, groups must deal with the constant internal tension between developing and advancing the position of individual members and maintaining a harmony that results from internal homogeneity.

It should be noted that we are suggesting that the dilemma facing groups regarding how to treat members is similar to the dilemma faced by members contemplating their relationship with the group. Brewer (1993) suggests that individuals are torn between the desire for interdependence and security which drives them to join groups (and become the prototypical member) and the desire for distinctiveness/uniqueness which pushes them to avoid groups and/or be unique within the group. It is interesting to speculate

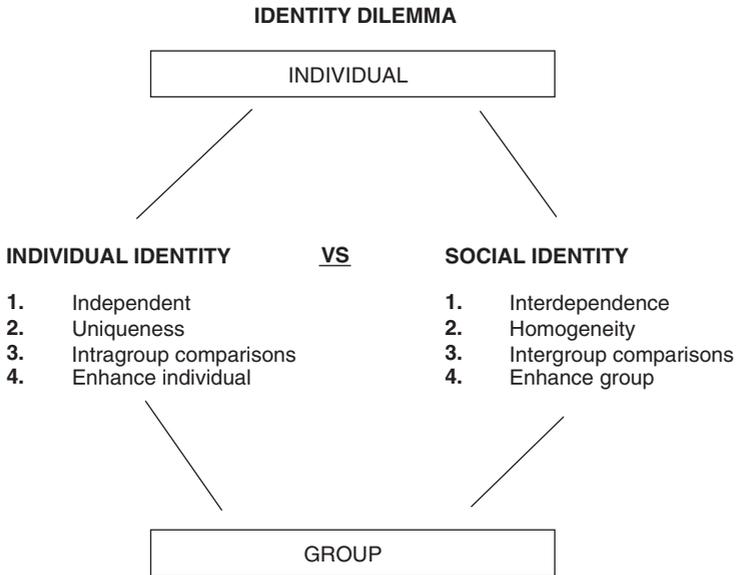


Figure 19.4. Group and individual identity dilemmas: Stressing individual identity or social identity.

that this ambivalence may be the source of energy that moves members through the various stages of group membership postulated by Moreland and Levine. We argue that groups, too, are faced with a dilemma. On the one hand, they want to give members the freedom to develop their potential and become unique. On the other hand, the group wants to treat members equally and minimize their distinctiveness (Figure 19.4).

The tension from dealing with these two opposing goals is not only vital for the group's identity, but it also is the source of energy that propels groups through developmental stages and works against stagnation. It is this tension that is responsible for the dynamic nature of groups. Although we wish to avoid becoming too Freudian in our approach, the struggle by the group to achieve a balance between member individuation and interdependence offers fertile grounds for future research.

In addition to this internal struggle, groups also live within a social community populated by other groups. Unfortunately, traditional social psychological approaches to the social community of groups present a rather impoverished picture. With few exceptions (Hartstone & Augoustinos, 1995; Huddy & Virtanen, 1995), investigators of intergroup relations have presented a two-group social field, the ingroup and the outgroup. Although, there may be many situations that involve only two groups, in many other situations, groups inhabit a crowded social world involving many groups (the ingroup and multiple outgroups). And groups must establish their identity within this field.

In a series of studies aimed at examining disadvantaged groups, Rothgerber and Worchel (1997) created a social field involving three groups: a disadvantaged ingroup, a disadvantaged outgroup, and an advantaged outgroup. The general design placed the par-

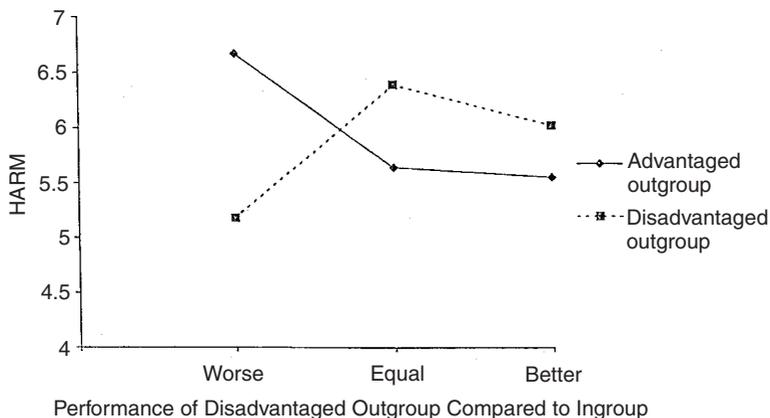


Figure 19.5. Level of harm delivered to outgroups as a function of disadvantaged outgroup's performance compared to ingroup.

ticipant in a disadvantaged group that worked on a series of tasks. Participants were led to believe that two other groups, one disadvantaged and one advantaged, were working on the same tasks. The participants received feedback about the performance of their group and the other groups. They were then given the opportunity to respond to their group and the outgroups.

A number of general patterns in the results are interesting. First, participants differentiated between the two outgroups and they responded differently to each outgroup. This finding is important because it shows that individuals do not necessarily divide their world into an ingroup and an outgroup. They do recognize the social environment as containing several distinct outgroups. A second interesting finding was that the response to an outgroup was influenced by the outgroup's characteristics and behavior *and* the behavior of the other outgroup. For example, the advantaged outgroup that performed at a constantly high level was harmed more when subjects were told that the disadvantaged outgroup performed poorly as compared to when it performed equal or better than the subject's disadvantaged group (Figure 19.5). These data argue that it is important to consider the broad context when examining intergroup relations. Finally, and more important to the present discussion, the results of the studies suggested that the ingroup chose to compare itself with the other similar outgroup (disadvantaged outgroup), and that these comparisons influenced the responses to the outgroup and the perceptions (identity) of the ingroup. When the disadvantaged outgroup (similar outgroup) performed better than the ingroup, that outgroup became a target for harm and the ingroup image suffered. In this case, individual members attempted to distance themselves from the ingroup by presenting themselves as dissimilar to other members and disavowing responsibility for the ingroup's performance. However, strong performance by the dissimilar outgroup (advantaged outgroup) did not elicit harm or affect perceptions of the ingroup.

This latter pattern of results suggests that the process of establishing a group identity is very similar to that involved in establishing an individual's social identity (Tajfel, 1982).

Groups compare themselves with outgroups and these comparisons affect the group's identity. However, when multiple outgroups populate the field the comparisons at the group level conform to social comparison theory predictions in that similar outgroups are chosen as the standard for comparisons. We would, therefore, argue that just as individuals are concerned with their individual identities, so, too, are groups concerned with establishing their identities. However, groups are often torn between the internal concern of allowing individual members to develop their unique identities and the external concern of developing the group identity.

Once again, we can apply the developmental framework to predict the outcome of this internal–external tension. Our group development model proposes that the *group identification* phase is characterized by efforts to establish group identity and group independence. Therefore, this phase should be characterized by concerns with social comparisons between groups and relatively little tolerance for individual concerns with identity. At this point, groups should show a strong sensitivity toward recognizing the various outgroups and distinguishing between these different groups. During the latter phases, *individuation* and *decay*, the emphasis is on individual identity. At this time, groups' focus should be turned within the group. Individual differences should be recognized and tolerated, and relatively little effort should be devoted toward distinguishing between outgroups.

Conclusion

Looking back over the territory we have covered, we hope that by complicating the issue of identity we have ultimately painted a clearer picture. In many respects, the previous research and theory on both social identity and group development has been elegantly simple and admirably focused. However, this laudable foundation has exacted a price. Research on social identity has often yielded conflicting results (Hinkle & Brown, 1990) and required expansion, refinement, and alteration of the basic theory (Mullen, Brown, & Smith, 1992). At the same time, group development models have spawned surprisingly little research and the studies that have used this framework have been narrowly focused on group phases, thereby avoiding the mainstream of social psychology.

Our aim has been to address these issues by explicitly linking the two areas. We have argued that both individuals and groups are engaged in a quest to establish their respective identities. The identities of the two entities are intertwined like the tight embrace of new lovers. The individual's identity is the result of a combination of personal, intragroup, and intergroup characteristics. The group's identity is composed of the fusion of the identities of individual members (internal) and the group's relation to other groups (external). Social comparison is one of the central processes underlying the formation of each of these identities. However, the focus of the comparison is both dynamic and changing in its attention.

Groups, we suggest, take an active role in focusing the comparison process and in shaping individual identity. Groups move through stages like the seasons of the year. The change from stage to stage may be gradual or abrupt, and the course may be altered by outside events. However, there is a dynamic to group change that lumbers along in a rather predictable fashion. These changes play a significant role in orchestrating both the

content and process of individual and group identity. The inclusion of group development in the study of identity allows for more precise predictions and a deeper understanding of identity. The group development context removes some of the randomness often associated with changes in personal identity and it offers a framework from which to predict the path of discrimination (advantaging the ingroup as opposed to disadvantaging the outgroup).

Obviously, more data are necessary before the present approach can be embraced. However, it does seem clear that the group is an active participant in the quest for identity. The social world is not simply a willing handmaiden, waiting to be ordered and organized by the individual's cognitive powers. The give-and-take relationship between the individual and the group presents individual identity as a dynamic process rather than a stable endpoint, and it helps explain why groups are forever in a constant state of flux. Both of these objectives should point the way toward new research.

Finally, we would like to leave the reader with one parting thought to contemplate. There is a seductive allure to the conclusion that individuals love and value their ingroup and loathe the outgroups. However, our examination of the complexity of individual identity and the social comparison that occurs within and between groups paints a different picture. Individuals, we argue, are locked in an ambivalent (love-hate) relationship with both their ingroup and the outgroups. They are both attracted and repelled by their ingroup. The attraction to the ingroup is based on the important position it occupies in the self-identity and the security individuals gain from membership. On the other hand, the insidious nature of social comparison with ingroup members and the motivation to remain independent incites resentment against the ingroup. Likewise, individuals are attracted and repelled by outgroups. The attraction has several bases. One is that social comparisons with outgroup members are less ego threatening than ingroup comparisons because of the implied dissimilarity between the individual and outgroup members. The comparison affords the opportunity to learn about the outgroup without personal threat. Second, the outgroup represents an alternative for the individual should he or she exit the ingroup. And in a perverse sense, the outgroup is seen as the agent keeping the ingroup in check, thereby preventing it from taking the individual's membership for granted. Indeed, several investigators (Allport, 1954; Fiske, 1999) have remarked on the irony that stereotypes of outgroups are often laced with very positive traits. This dual ambivalence should be at the base of all intergroup behaviors, and its existence may help explain why an individual's responses to the ingroup and outgroup vary so dramatically over time.

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CHAPTER TWENTY

Cultural Dimensions of Negotiation

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There has been, in recent years, an unprecedented increase in contacts of people from different cultures – political, commercial, scientific, social – in part driven by the increase in global trade and spread of multinational organizations (Erez, 1994). No doubt these contacts are abetted by modern technologies – telephone, television, Internet, telecommunications satellites, and long-distance travel. Much intercultural contact involves negotiation. For example, to determine aspects of the scientific mission of the Space Station, negotiations between Japanese, Russian, European, and American scientists are taking place. Given that a central element of relationships in all societies is that people negotiate, it is not surprising that a central element of intercultural contact is negotiation. The reasons for negotiation may vary, but generally negotiation serves either as a way to resolve disputes, or as a means of determining the terms of a joint venture or other type of exchange. Intercultural contact raises questions about the character of negotiations within different cultures, as well as the character of negotiations between cultures. This chapter provides a selected review of the rapidly evolving literature on cultural dimensions of negotiation. For reviews of earlier works on culture and negotiations, readers are referred to Leung (1997) and Rahim and Blum (1994).

The social psychological study of negotiation has shown healthy growth since the first experiments on concession making by Kelley, Beckman, and Fisher (1967). Initially, social psychologists simulated negotiation using rather simple, single-dimension negotiation tasks, and focused on narrow negotiation behaviors like concessions made over time. For example, in a simulated buyer–seller negotiation, an offer of \$10,000 for a used car, and then a second offer of \$9,000, indicates a \$1,000 concession. This work soon evolved into the study of more complex forms of behavior in negotiation, problem solving and information processing, and the role of motivational and cognitive variables (Pruitt & Carnevale, 1993; Thompson, 1998). The classic study of Pruitt and Lewis (1975) indicated that “resistance to making concessions” (from Kelley et al., 1967) interacted with cooperative and individualistic motivational orientations (from Deutsch, 1973), in what later became known as the “dual-concern” model (cf. Pruitt, 1981; Pruitt & Rubin, 1986).

This model, one of the few general theoretical formulations in the social psychology of negotiation, makes predictions about concession behavior, problem-solving behavior, contentiousness (e.g., threats), as well as the outcome of negotiation.

For some time, social psychologists have been interested in cultural differences in negotiation behavior. For example, Kelley, Sure, Deutsch, Faucheux, Lanzetta, Moscovici, Nuttin, and Rabbie (1970; see Mann, 1980) found that regions of the world, and regions of the United States, differ in terms of the degree to which people will define a negotiation task as cooperative or competitive. But it was not until the 1990s that social psychologists, and psychologically influenced scholars in organizational behavior, developed a focused interest in the intersection of culture and negotiation, the delay due perhaps to the arrival of better theories of culture (Fiske, 1990; Leung, 1997; Markus & Lin, 1998; Schwartz, 1990, 1994).

Negotiation provides a rich context for the study of social psychological variables, social-cognitive processes, attitudes, influence, intergroup relations, emotion, and so on. The general paradigm that has guided most social psychological research on negotiation posits that the conditions that prevail at the time of negotiation have an impact on psychological states, and these states have either a direct impact on outcomes, or an indirect impact that is mediated by the strategies and tactics chosen by the parties (Carnevale & Pruitt, 1992). The conditions that prevail at the time of negotiation include factors such as time pressure, and social context variables such as the presence or absence of constituents. Psychological states include motives such as the desire to beat the other, or to achieve a fairness principle such as equal outcomes, or to establish or improve a positive relationship with the other. Psychological states also include negotiator cognition, beliefs about the issues, whether outcomes are framed as gains or losses, and how information is processed, and so on. The study of negotiator cognition has mainly concerned the application of information processing and decision models to negotiation.

The work today on negotiation reflects several important early influences. These include mathematical models of rational decision making in negotiation that were developed by economists and game theorists (e.g., Luce & Raiffa, 1957), and theories about the origins and impact of negotiator tactics that were developed by an economist (Schelling, 1960) and industrial relations specialists (Walton & McKersie, 1965). One strength of the social psychological approach to negotiation is the development of laboratory tasks for testing causal hypotheses. The tasks are often simplified versions of reality, yet retain key elements of the structure or processes of negotiation.

There have been many studies of the prisoner's-dilemma-type game (see Rubin & Brown, 1975), which can be useful for understanding negotiation in that there is a structural similarity (see Pruitt & Carnevale, 1993, chapter 2). But behavior in this and other matrix games largely reflect matters of coordination rather than negotiation, and provide only the simplest of response variables that do not capture the dynamics and complexity of behavior in negotiation. It is not surprising to see comments like that of Triandis (1980), who stated: "Most of the work using versions of the prisoner dilemma game in different cultures results in uninterpretable findings" (p. x). Negotiation tasks, of the sort developed by Pruitt and Lewis (1975; cf. Siegel & Fouraker, 1960), provide a better means for assessing negotiation behavior.

Strategies of Negotiation

It is possible to distinguish, in all cultures, three broad strategies for reaching agreement in negotiation. A strategy is a plan of action, specifying broad objectives and the general approach that should be taken to achieve them. Some of these strategies must be translated into more specific tactics in order to be used. The strategies are:

- 1 *Concession making* – reducing one's goals, demands, or offers.
- 2 *Contending* – trying to persuade the other party to concede or trying to resist similar efforts by the other party. There are many tactics that can be used to implement this strategy, including threats (messages indicating that one will punish the other party if the other fails to conform) and positional commitments (messages indicating that one will not move from a particular position).
- 3 *Problem solving* – trying to locate and adopt options that satisfy both parties' goals. There is a host of problem-solving tactics, including active listening and providing information about one's own priorities among the issues under discussion.

A general proposition that has received much empirical support is that conditions that reduce the likelihood of using one strategy (concession making, problem solving, or contending) increase the likelihood of using the remaining two. If two of the strategies are problematic, the third will be given larger consideration. For example, the evidence suggests that people regard contending as likely to offend the other and disrupt the relationship (Pruitt & Carnevale, 1993). Thus, two people, engaged in negotiation, who expect to work together in the future and believe that a positive relationship is important, are less likely to use contending, and more likely to use concession making and problem solving (Ben-Yoav & Pruitt, 1984). The evidence to date suggests that this general principle appears to be invariant across cultures. Another example of a general principle that appears to be culturally invariant is that negotiation often follows a period of struggle. People fight and then work out their differences. Unions go on strike and then talk it over. Nations threaten each other and then negotiate. What usually happens is that struggle seems initially advantageous to one or both parties, but its costs become more apparent over time. The costs of struggle often increase to the point where they become prohibitive. Experience shows that the other party cannot be exploited or pushed around; or the other concedes for a while and then becomes resistant to further pressure. The parties enter into what Touval and Zartman (1989) call a "hurting stalemate."

Culture

One goal of cultural analyses of negotiation is to discover two forms of rules: etic rules (universals) and emic rules (culture specific). The anthropologist Gulliver stated it

nicely: "... conceptualize the pattern of a basic universal process applicable to all kinds of negotiations at whatever societal level (from interpersonal to international), in whatever socio-cultural context and irrespective of the issues in contention . . . [this is] useful to the extent it can facilitate cross-cultural comparison and the identification of fundamental features and processual interactions" (Gulliver, 1988, p. 253; see Gulliver, 1979). We want to know what are the common elements in order to facilitate cultural comparisons.

Anthropologists have long been interested in culture and conflict, with ethnographic reports replete with interesting observations. Billings (1991), for example, described a negotiation in two cultures, the Tikana of Northern New Ireland and the Lavongai of New Hanover, neighbors on adjacent islands in the Bismarck archipelago north of Papua New Guinea, each with a population of about 7,000. According to Billings, these groups have much in common but they settle disputes differently, in a manner consistent with their "styles" of culture. The Tikana are group-oriented, whereas the Lavongai are individualistic. Billings described a conflict in Tikana: "Two old women . . . each thought a baby pig was her own . . . It developed into a dispute about where the boundary was between their two houses . . . led to great interest in the community for resolving the conflict . . . eventually, the property in question became group property . . ." (p. 252). This contrasts sharply with disputes among the Lavongai, which are resolved privately, in face-to-face conflict, often violent, without group involvement.

Different kinds of psychologists view culture and psychology in quite different ways and adopt different methods. Cultural psychologists, for example, tend to adopt an ethnographic approach that often emphasizes in-depth interviews, the unique aspects of one culture, and cultural meanings. For example, in Japan, the concept "namawashi" refers to behind the scenes negotiation or a "tending of the roots" so that decisions are reached after a minimum of conflict and almost through osmosis. With this, political leaders are expected to be consensus builders rather than decision makers, and the emphasis is on how the group operates rather than on any individual contributions to the group. *Cross-cultural* psychologists tend to adopt the social psychologist's approach of large samples, many observations from many cultures, and treat culture as an independent variable having the same status as an experimental treatment. *Cross-cultural* psychologists try to discover laws that will be stable over time and across cultures. A strong interest of *cross-cultural* psychologists is the emphasis on collecting comparable data in several cultures.

Culture is the "human-made part of the environment" (Herskovits, 1955) that has a subjective aspect, that is, the shared perceptions of the social environment. The subjective aspect of culture results in automatic processing of information, because it specifies the things that are noticed, and provides a language for labeling experience (Markus & Kitayama, 1991; Triandis, 1994, 1995). In addition, culture specifies what behaviors are desirable or proscribed for members of the culture (norms), for individuals in the social structure (roles), as well as the important goals and principles in one's life (values). Culture also specifies how things are to be evaluated (Carnevale, 1995). This implies that people of different culture will have greater difficulty in interaction, in understanding, and in valuation.

Perhaps the most important and best-studied dimension of cultural difference is that of individualism and collectivism (Hofstede, 1980; Kagitcibasi & Berry, 1989; Triandis, 1995). Individualism is a cultural syndrome that emphasizes the idea of individuals as autonomous. Collectivism is distinguished by the notion that individuals are highly interdependent parts of groups (Triandis, 1995). The general tendency is that in collectivist cultures the self is defined as interdependent with an ingroup (family, tribe, nation, etc.) (Markus & Kitayama, 1991); the ingroup's goals are given priority over personal goals (Triandis, 1990; Yamaguchi, 1994); norms are more powerful predictors of social behavior than attitudes (Abrams, Ando, & Hinkle, 1998); and social relationships are more communal (Mills & Clark, 1982), rather than being defined in exchange theory terms (Kim, Triandis, Kagitcibasi, Choi, & Yoon, 1994). Conversely, in individualist cultures the self is autonomous of ingroups; personal goals are given priority over ingroup goals; attitudes are more powerful predictors of social behavior than norms, and social behavior can be described by exchange theory (Triandis, 1995).

Triandis (1995) further distinguished vertical and horizontal collectivist and individualist cultures. The vertical cultures emphasize hierarchy, the horizontal stress equality. Triandis (1996) argued that vertical collectivist cultures are similar to the cultures found in South Asia; horizontal collectivist cultures are like the culture of the Israeli kibbutz. Vertical individualist cultures emphasize that the individual is different (superior, the best) from others; horizontal individualist cultures emphasize that the individual is unique, but not superior. Triandis argued that the U.S. corporate and academic cultures are vertical individualist, while Sweden is horizontal individualist. Competitiveness is especially high in vertical individualistic cultures.

Corresponding to the individualism and collectivism concepts at the cultural level are processes at the psychological level. For example, individuals associated with collectivist cultures tend to define the group as the basic unit of social perception; the self is defined in terms of ingroup relationships; ingroup goals have primacy or overlap with personal goals; ingroup harmony is a value; and social behavior tends to be very different when the other person belongs to an ingroup versus an outgroup. Individuals associated with individualist cultures tend to define the individual as the basic unit of social perception; the self is an independent entity; personal goals have primacy over ingroup goals; ingroup confrontation is acceptable; and social behavior is not so different when the other person belongs to an ingroup versus an outgroup.

Culture Effects in Negotiation

In negotiation behavior, there is evidence of extensive cultural variation. Leung and Bond (1984) found that Chinese allocators were inclined to renounce their personal gain to assist ingroup members when they distributed a group reward. Americans failed to form such an ingroup–outgroup distinction. Leung (1988) also discovered that Chinese were less contentious during conflicts with ingroup members and more contentious in disputes with outgroup members, compared with Americans. Probst, Carnevale, and Triandis

(1999) reported a similar effect in a social dilemma study. Ohbuchi and Takahashi (1994) asked Japanese and American subjects to describe their conflict-handling behaviors, and found that Japanese used avoiding and indirect methods (suggesting, ingratiation, impression management, and appeasing) more, whereas Americans used direct methods (persuasion, bargaining, and compromise) more. Compared with Americans, Japanese subjects were also less likely to make it known to others when actions of others affected them negatively in daily life. Research conducted in two Latin American collectivistic groups, Brazilians and Mexicans, also shows a greater preference for styles of conflict resolution that are high in concern for others (collaboration and accommodation) as compared to people from the United States, an individualistic culture (Gabrielidis, Stephan, Ybarra, Pearson, & Villareal, 1997; Pearson & Stephan, 1988). Finally, Graham, Mintu, and Rodgers (1994) found that collectivism was correlated with a negotiation style that is characterized by cooperativeness and willingness to attend to the other party's needs. Taken together, the data support the view that collectivist negotiators, more than individualist negotiators, are more concerned with preserving relationships (Markus & Lin, 1998; Ohbuchi, Fukushima, & Tedeschi, 1999).

Several studies show that individualism–collectivism affects negotiation behavior in a more complex way. Chan, Triandis, Carnevale, Tam, and Bond (2000) tested the hypothesis that collectivists are more sensitive to the nature of the relationship with the person they face in negotiation. They used samples of subjects in the United States and Hong Kong, and also measured allocentrism and idiocentrism. Subjects in each culture were asked to negotiate with either a friend or a stranger. A 2×2 factorial design involved culture (Hong Kong, Champaign, IL) and relationship (friend vs. stranger). The laboratory task was a computer version of the standard integrative bargaining paradigm popularized by Pruitt (1981). Subjects sat at a computer that they thought was connected to another computer, and were led to believe that they would communicate via a computer network with another negotiator. The other negotiator's behavior was, in fact, simulated by a computer program. The name of the other negotiator (either the name of the subject's friend or the name of a stranger) appeared on each screen as the negotiation progressed. The data supported the ingroup/outgroup aspect of the theory of collectivism. The effect of relationship (the difference between negotiating with a friend vs. negotiating with a stranger) was greater in the Hong Kong sample than in the U.S. sample. The Hong Kong subjects showed greater cooperation with a friend, and less cooperation with a stranger, than the U.S. subjects.

The Chan et al. study also suggests that collectivists find it more difficult to separate relationships from negotiation behavior. The data also are consistent with the idea that collectivists want more to preserve harmony in the group, and that they are less willing to risk losing the relationship. Analysis of the character of the messages sent by subjects in the Chan et al. study indicated that the negotiators in Hong Kong were more likely to send cooperative messages to their friend than were negotiators in the United States.

Gelfand and Realo (1999) suggest that pressures from others in negotiation can have differential impact on negotiators depending on culture. Results based on Caucasian and Asian Americans and Estonians showed that collectivism moderated the effects of accountability on negotiators' psychological states, behaviors, and outcomes. Account-

ability led to more competitive behavior among individualists, but more cooperative behavior among collectivists.

Individualism and collectivism also interact with the nature of the conflict in their effect on negotiation behavior. Tse, Francis, and Walls (1994) studied how executives from mainland China and Canada handled two types of conflict: task-related and person-related. In the task-related conflict, the problem was caused by different production technologies, whereas in the person-related conflict, the problem was caused by the arrogance and stubbornness of the other negotiator. Tse et al. (1994) found that with regard to the task-related conflict, the Canadians were more likely to recommend discontinuation of negotiation and less likely to be friendly. Thus, the Chinese were keener to maintain a relationship despite the conflict. In contrast, when the conflict was caused by personal styles, the Chinese were more likely to recommend discontinuation of negotiation, showed less satisfaction toward the negotiation, and were less likely to be friendly. The Chinese did not show much interest in maintaining a relationship with a difficult and hostile person.

Finally, Roth, Prasnikar, Okuno-Fujiwara, and Zamir (1991) examined cultural differences in an ultimatum bargaining game. In ultimatum bargaining, one subject proposes a division of a resource and the other subject either accepts or rejects it. If the other accepts it, both subjects receive the allocation that was proposed. However, if the other rejects it, both subjects get nothing. Roth et al. found no differences across samples (United States, Yugoslavia, Japan, Israel) in acceptance rates, which is an index of general market behavior. But they reported large differences in the amount that subjects were willing to accept, with Japanese and Israeli subjects willing to accept lower amounts. These differences in amount accepted cannot be attributed to language, currencies, or experimental confounds – since the market-level negotiation variables did not differ – but the differences can be explained in terms of cultural differences in perceived fairness. However, it is unclear what causes the cultural differences in perceived fairness.

Intercultural Negotiation

Some recent work has examined how culture impacts intercultural negotiation. Brett and Okumura (1998) examined intercultural negotiations, with Japanese and American participants with either a same-culture partner or an other-culture partner. The intercultural dyads reached outcomes that were of lower joint value than intracultural dyads. Consistent with the Gelfand and Christakopoulou (1999) study, responses to a post-negotiation questionnaire revealed that intercultural dyads had less accurate mutual understanding of each other's priorities, and the Japanese negotiators understood more about American priorities than vice versa. Adler and Graham (1989) also found that Japanese negotiators achieved lower levels of payoff in negotiations with Americans than with fellow Japanese. Similarly, Anglophone Canadians achieved lower levels of payoff when negotiating with Francophone Canadians, despite the fact that the Francophones were more cooperative when negotiating intercultural. This body of work points to the difficulty of reaching optimal agreements in intercultural negotiation.

Tinsley, Curhan, and Kwak (1999) suggest that intercultural negotiations reflect a “dilemma of differences,” where differences between cultural scripts can cause conflict at the bargaining table, but differences in preferences can provide opportunities for integrative agreements. That is, if culture leads two negotiators to value issues differently, this may provide the basis of a trade on those two issues.

Gelfand and Christakopoulou (1999) examined intercultural negotiations between Greek and U.S. students. They argued that cultural ideals and values in individualistic cultures emphasize separating from others and promoting one’s own internal attributes (Markus & Kitayama, 1991; Triandis, 1989), which led them to predict that negotiators in these cultures would be focused on their own interests during negotiations, which would inhibit an accurate understanding of their counterparts’ interests. In addition, they argued that cultural ideals and values in collectivist cultures emphasize maintaining relatedness and fitting in with relevant others, which led to the prediction that negotiators in these cultures would be directed to the needs of others during negotiations, which would enhance an accurate understanding of their counterparts’ interests. The data supported these predictions.

A relevant, interesting anecdote comes from Barbara Huie (1987), who described an interesting case of mediation of a conflict between a collectivist group and an individualistic group. The conflict occurred along the Texas Gulf Coast. The mediation was conducted by a conciliator who worked for the Community Relations Service, a U.S. government agency. The context for the conflict was provided by the many Southeast Asians living in Texas, with many earning a living through fishing and shrimping in the Gulf of Mexico. Different perceptions characterized each side of the conflict. On one side: “White shrimpers along the Texas Gulf Coast were angered that groups of Vietnamese shrimpers would work their nets in the same area, overfishing the waters . . .” And on the other side of the conflict: “When a white shrimper discovered a good harvesting spot, other white shrimpers would pass, leaving the lucky individual alone to reap the rewards of his labor. Vietnamese shrimpers on the other hand, upon discovering a good spot, would invite others to the area to share in the good fortune” (Huie, 1987, p. 8). The two groups apparently valued the resource differently, in the sense that they differed in their willingness to share the resource with others in the group. Consistent with this, Carnevale (1995) reported several studies that suggest that individualists value property that is owned by the individual, whereas collectivists value property that is owned by the group, and this difference in valuation is reflected in negotiation. This cultural difference in valuation suggests that culture can have an effect on negotiation even before negotiation gets started.

Power Distance and Negotiation

Power distance refers to the acceptance of hierarchies in societies and the special privileges accorded to those at the top of the hierarchies (Hofstede, 1980). In high power distance societies, the intervention of a high-status third party in a dispute is deemed as legitimate. In a culture-level study of 23 national groups, Smith, Peterson, Leung, &

Dugan (1998) found that people from low power distance countries were more likely to rely on their own training and experiences, their peers, their subordinates, but less on their boss, to resolve a dispute within their work group. In high power distance societies, people lower in the hierarchy are less likely to confront people occupying more senior positions. Bochner and Hesketh (1994) studied employees in Australia and found that those from high power distance cultures (e.g., Hong Kong) were less inclined to argue against their superiors' decisions and were more cautious of discussing work problems with a superior from a different ethnic background than were employees from low power distance cultures (e.g., Finland). Furthermore, in high power distance societies, people occupying senior positions are more likely to use their position power in negotiating with those lower in the hierarchy. Kozan (1989) found that Turkish managers, a high power distance group, were more likely to use power tactics (e.g., forcing) against subordinates than against superiors, whereas no such differences were observed with Americans. Similarly, James, Chen, and Cropanzano (1996) reported that Taiwanese workers, another high power distance group, were more likely to endorse coercive power as a legitimate leadership strategy than were their U.S. counterparts.

Culture at the Level of the Individual versus the Level of the Collective

There is now considerable evidence that relationships found at the cultural level of analysis (where the responses of the individuals have been aggregated within culture) may be different from relationships obtained at the individual level of analysis (Leung, 1989). Triandis, Leung, Villareal, and Clack (1985) proposed two terms corresponding to individualism and collectivism at the cultural level: *idiocentrism* and *allocentrism* (cf. Smith & Bond, 1999). Hui, Yee, and Eastman (1995) provided an example of different relationships found at the cultural and individual levels of analysis. Job satisfaction was *positively* related to individualism at the cultural level, and *negatively* related to idiocentrism in data collected in Hong Kong. A possible interpretation is that in individualistic cultures people are more affluent (Hofstede, 1980), and also more job mobile, so that they settle in jobs that satisfy them. The more affluent and individualist the culture the more satisfied they are with their jobs. In collectivist cultures such as Hong Kong, individuals are expected to be especially concerned with interpersonal relationships. However, those who are idiocentric in Hong Kong may pay too much attention to the task and not enough attention to interpersonal relationships, and thus tend to be rejected by their coworkers. Being rejected by co-workers is likely to reduce a person's job satisfaction.

The difference in level of analysis is important, as shown in a recent study by Triandis et al. (2000) on cultural differences in the propensity to lie in a negotiation context. Triandis et al. argued that propensities to lie should be greater in negotiations in collectivist cultures, especially those that emphasize verticality, as compared to other cultures. However, they also expected that at the individual level of analysis, the relationship would be reversed, that is, that idiocentrism would be related to lying at that level of

analysis. Prior research had determined that people are likely to lie to help save face in important, close relationships (DePaulo & Bell, 1996). Given that maintaining ingroup harmony and face are central concepts in collectivist cultures (especially vertical cultures; Ho, 1976; Hu, 1944), Triandis et al. expected that the propensity to lie may be greater and more adaptive in vertical collectivist cultures. In addition, people in collectivist cultures do what is expected of them, by the norms of their ingroups, and their roles. If we observe a person's behavior in a role that requires deception, we are more likely to see this behavior in collectivist than in individualist cultures.

Indirect evidence consistent with the hypothesis that people in collectivists cultures may lie more frequently than people in individualist cultures was found in published data provided by the Berlin Transparency International (see the *New York Times*, August 20, 1995; Section E, p. 3). This organization monitors corruption around the globe, based on reports provided by academic, business, and government officials. The most corrupt countries were reported to be Indonesia, China, Pakistan, and Venezuela. The least corrupt were New Zealand, Denmark, Singapore, and Finland. There were 36 countries in the Berlin Index and also in Hofstede's (1980) data, which included a measure of individualism. Triandis et al. computed the correlation between the Berlin Index (large numbers mean low corruption) and collectivism and it was $-.63$ $p < .0001$. The countries that are most corrupt, according to the Berlin Index, tend to have vertical collectivist cultures. The countries that are least corrupt tend to have horizontal individualist cultures. The importance of the vertical–horizontal dimension was also reflected in the correlation of the Berlin Index with Hofstede's power distance index, which was $-.70$ $p < .0001$. Horizontal cultures are less corrupt.

On the assumption that “corruption” is a more general term that includes deception, Triandis et al., using a scenario methodology in eight cultures (four relatively collectivist, according to Hofstede, 1980: Hong Kong, Japan, Korea, Greece; and four relatively individualist: United States, Australia, Germany, and the Netherlands), tested the hypothesis that the more vertical collectivist the culture the greater the propensity to lie in negotiation situations, and the more horizontal individualist the culture the less would be the propensity to lie. The data supported this.

But the pattern at the individual level of analysis was quite different. Triandis et al. argued that idiocentrics, especially if they are vertical, are competitive. Competition means that if idiocentrics are placed in a situation where winning requires lying they will lie. At the individual level, Triandis et al. reported that idiocentrics were more likely to lie than allocentrics, if placed in situations where winning requires them to lie.

This difference between the individual and cultural levels of analysis can be seen in Figure 20.1. Lying behavior is represented on the horizontal axis. Within the figure, the two culture samples are shown, with the collectivist cultures showing higher levels of lying on the horizontal axis. The vertical access represents the individual level of idiocentrism, with idiocentrism higher in the individualist cultures than the collectivist cultures. The interesting effect is the relationship between idiocentrism and lying behavior within each culture. It is positive. Thus, with these distributions, one can see that the culture variable can show one relationship with a criterion variable (in this case, lying behavior), whereas culture assessed at the level of the individual can show the opposite pattern, as reported by Triandis et al. (2000).

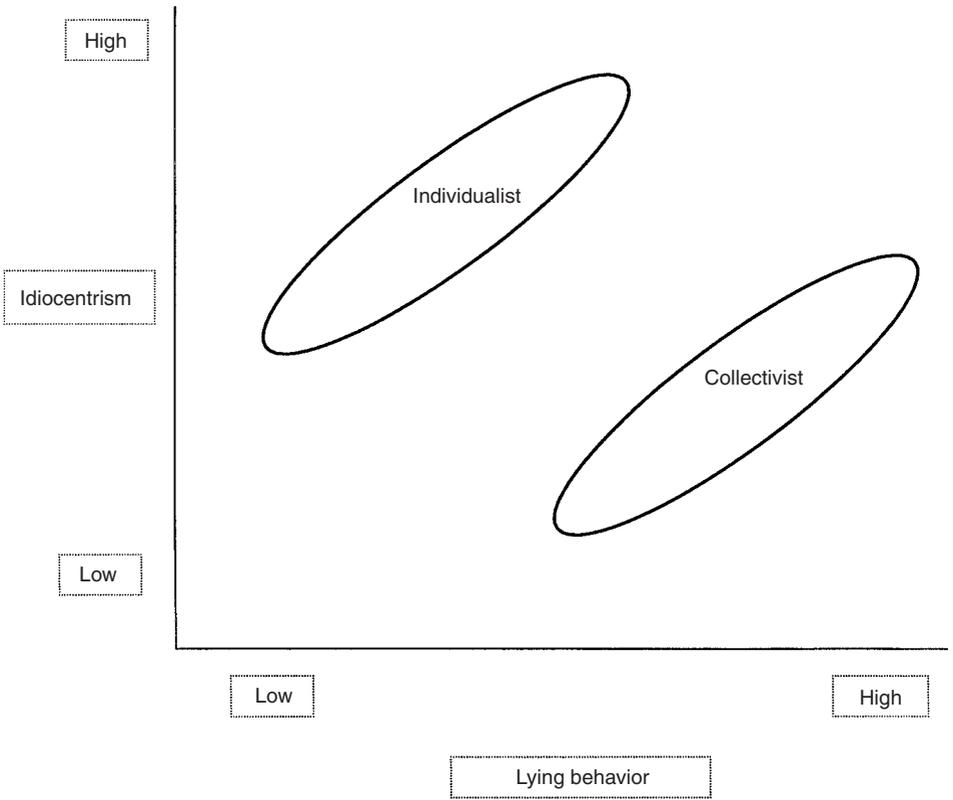


Figure 20.1. Lying and culture at the level of the individual and at the level of the culture (adapted from Triandis, Carnevale, Gelfand et al., 1999).

Conclusion

Many authors have characterized the role of culture in intergroup conflict as the source of friction (Cohen, 1997; Zartman, 1993). For example, Triandis (1994) refers to the start of the Gulf War as a major culture mistake. In January, 1991, James Baker, then the United States Secretary of State, met with Tariq Aziz, the foreign minister of Iraq. They met in an effort to reach an agreement that would prevent a war. Also present in the room was the half-brother of Saddam Hussein, whose role included frequent calls to Hussein with updates on the talks. Baker stated, in his standard calm manner, that the United States would attack if Iraq did not move out of Kuwait. Hussain's half brother heard these words and reported that "the Americans will not attack. They are weak. They are calm. They are not angry. They are only talking." Six days later Iraq saw Desert Storm and the loss of about 175,000 of their citizens. Triandis argued that Iraqis attend to *how* something is said more than *what* is said. He further suggests that if Baker had pounded the table, yelled, and shown outward signs of anger, the outcome may have been entirely dif-

ferent. This example illustrates the difficulty of diplomacy in a multi-cultural world. If James Baker had pounded the table would war not have occurred? Would Iraq have peacefully retreated from Kuwait? Regardless, the point is that cultural misunderstandings can cause conflict. However, it should be noted that culture can play a positive role. For example, Carnevale and Choi (2000) have shown that cultural ties, even if it is just to one party to the conflict, can provide the basis for access, acceptability, and influence of a mediator. They give examples of international conflicts where culture provided the basis for contact of a mediator with the disputants, which resulted in resolution of the conflict.

There has been an unprecedented increase in cross-cultural contact between people, perhaps driven by migration, by pressures on organizations to become more competitive through global expansion, and facilitated by easy and inexpensive communication and travel. Cross-cultural contact makes salient both cultural differences and similarities. The challenge for social psychologists is to build models of culture that elucidate basic group processes. This is especially a challenge in that the bulk of the literature on group processes has been conducted by Western researchers, with a fairly narrow set of cultures, although the situation is better than it was 20 years ago. No doubt there are basic, fundamental principles and processes of all group behavior, including negotiation (cf. Gulliver, 1979). But how these processes are expressed can differ in different cultural contexts.

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CHAPTER TWENTY-ONE

Overcoming Dependent Data: A Guide to the Analysis of Group Data

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It will come as no surprise to the readers of this *Handbook* that research on groups is not easy to conduct. The questions addressed in group research may be of central interest to social psychology and other fields, but they are inherently difficult questions to examine empirically. Groups are hard to measure, getting individuals to participate in groups is not always trivial, experimental sessions may be difficult to structure and subject recruitment may be tedious. And finally, analyzing the data from groups can pose challenges that research endeavors in other areas typically need not confront.

It is this last difficulty that is the focus of the present chapter. In general, the problems to be confronted in the analysis of group data arise from dependencies in those data that are highly probable because of the group structure under which they are collected. Most of the inferential statistical tools in wide use among social psychologists make strong assumptions about the independence of data, specifically about the independence of residuals or errors, and the failure to meet those assumptions can seriously compromise the conclusions that are reached about the significance or non-significance of effects that are tested.

In the initial section of this chapter, we define what it means for dependence to exist in data and we discuss the various factors in the conduct of group research that make problems of dependence likely to occur. We then turn to specific designs, defined by the relationship between the independent variable(s) of interest and the source of the dependence, and consider the direction and magnitude of bias in statistical inference that ensue if dependence is ignored. In each case, we discuss analytic solutions to the dependence problem and what the relative costs of those solutions are. We start out by considering

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fairly simple designs in group research, where the solutions to the dependence problem are widely known. Ultimately, however, we build on these relatively simple designs and consider a variety of group research designs where analytic strategies are a bit more convoluted.

Our treatment of these issues borrows heavily from others who have written on the analysis of dependent data, especially in group settings (e.g., Kashy & Snyder, 1995; Kenny & Judd, 1986; Kenny, Kashy, & Bolger, 1998; Kenny & la Voie, 1985). Yet we intend for this exposition to be more than just a review and synthesis of previously published material. Our goal is to provide a unique and comprehensive treatment of the issues involved.

Definitions and Origins of Dependence in Group Research

Dependence must be defined relatively. It occurs when observations that are linked in some way are more or less similar to each other compared to observations that are unlinked. The links that provide the basis for dependence do not come from examining the data and looking for observations with similar or dissimilar scores. Rather, the links are based on a priori knowledge that provides reason to suspect dependence. The obvious source of linkage in group research is provided by the groups in which individual subjects are clustered or, more formally, under which individual observations are nested. So, imagine that data are collected from groups of three individuals and the goal is to evaluate the impact of some independent variable on those observations. Because of the fact that groups of three observations are linked by their common group membership, it is likely to be the case that there is more (or less) similarity between observations from the same group than between observations from different groups. Given this group structure to the data, the question of whether or not dependence exists in this manner is an empirical question: we can examine whether variation among observations from the same group is greater or smaller than variation among observations from different groups. Note, however, that if the information about group membership were somehow lost, so that all we had were the individual observations, there would be no way to examine the data to determine if dependence is a threat. Because the knowledge of linkage was no longer available, the assessment of whether linked observations are more or less similar than unlinked ones would not be feasible.

It is frequently assumed that dependence in group data arises from social interaction between group members. Although this is one source of the dependence that likely characterizes group data, it is certainly not the only one. Observations within groups may be more or less similar than observations between groups because of a variety of factors other than social interaction. Consider a common example in educational research, where individual observations are taken from children in classrooms. Observations within classrooms are likely to be dependent not only because the children in classrooms interact with each other, but also because they share a common teacher, a common setting, and a host of other factors which may influence their responses. So even if individuals in group research don't actually interact with each other, it is still likely that dependence of observations

within groups is a problem due to the other factors that are common to members of any one group and that are likely to influence responses. At the most basic level, sampling procedures may lead to dependence simply because of the similarities of participants who are recruited together at any one time.

We said that dependence must be defined relatively rather than in any absolute sense. This is because dependence must be identified by comparing the degree to which observations that are linked are more or less similar compared to observations that are not so linked. Both sorts of pairs of observations, linked and unlinked, must be present for dependence to be assessed and to be problematic. To illustrate, suppose we had observations from two classrooms. Dependence is likely to exist because observations within classrooms (i.e., linked by their common classroom) are likely to be more similar than observations that come from different classrooms (i.e., unlinked). However, if we only had observations from one of the two classrooms, then there would be no way to assess dependence, since we have no pairs of observations that are unlinked. And the analysis of all of the observations from one classroom would not be seriously biased by the presence of common links among all of the observations, so long as appropriate generalizations to the theoretical population from which those observations were sampled were undertaken (i.e., generalizations should not be made across classrooms).

In a deep sense, then, statistical inference problems induced by dependence of observations are caused by a heterogeneity of variance problem in linked data structures where dependence exists. Because dependence means that linked observations are more or less similar than unlinked ones, the two sorts of observations have different variances. If we only had observations that were linked, that is, from a single classroom, then this heterogeneity of variance problem is not found. Similarly, if we only had observations from different classrooms, one from each, then the class-induced heterogeneity of variance would disappear.

The most commonly encountered form of dependence in group data is positive dependence, where linked observations are more similar to one another than are unlinked ones. However, negative dependence is equally problematic for analyses even if it is likely to occur less frequently than positive dependence. Imagine a situation where pairs of individuals compete against each other and their outcomes are assessed. It is extremely likely that such outcomes will be more dissimilar on average within pairs than between pairs due to the zero-sum nature of the outcomes available to each pair member, defined by competition. Negative dependence of outcomes due to competition would be virtually assured. Negative dependence may also result from the measure rather than the procedure used in research. For instance, if groups members are asked to rank each other on their social influence (Ng, Bell, & Brooke, 1993), it will necessarily be the case that the mean ranking in every group will be identical. As a result, all of the variance in rankings is within groups and none of it is between, resulting in substantial negative dependence.

In general, dependence in data is assessed by estimating the intraclass correlation. Following our explanation of dependence as a problem of heterogeneity of variance, such a correlation estimates the relative difference of within-group and between-group variation. The details of its computation will be laid out in the specific examples that we cover in the following sections. A very general approach to the assessment of dependence has been

Table 21.1. Mean Group Liking as a Function of Interaction Instruction

<i>Instruction</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Cooperation	68.63	7.84	45
Competition	65.40	7.00	45

given by Kenny and Judd (1996). This approach directly estimates and compares the average similarity of pairs of observations that are linked to the average similarity of pairs of observations that are unlinked.

Our consideration of the analysis of group data is organized by the type of design that the researcher is likely to employ. We define types of designs by focusing on the relationship(s) between the source of linkage that induces dependence (typically group membership) and the independent variable(s) whose effects are of theoretical interest. We start with designs where groups are nested under levels of the independent variable of interest. We then turn to designs where the independent variable is crossed with groups. Then the more complicated situation where the independent variable varies both within and between groups is considered. In each case, we discuss how the dependence problem is dealt with and what the consequences are of (1) ignoring dependence, and (2) acting as if dependence is present when it is not.

Groups Nested Under Levels of the Independent Variable

We begin by considering the situation in which groups of participants are nested under levels of the independent variable such that all members of any one group receive the same level of the independent variable. In other words, groups as a whole are assigned to different levels of the independent variable. For example, suppose a researcher was interested in the effect of the type of interaction among participants in groups on liking for the group. She randomly assigned 90 participants to work in groups of three and groups were randomly given either cooperative or competitive task instructions. Following task completion, each member of the group rated how much he/she liked the group on a scale from 0 (*do not like at all*) to 100 (*like very much*). The researcher expected that liking for the group would be higher after cooperating with other group members on the task than after competing with other group members on the task. The means and standard deviations for each level of the independent variable are given in Table 21.1.¹

The question of interest is whether group liking is higher on average in the cooperative condition than in the competitive condition. We report two different analyses of these data. The first ignores potential dependence among observations and treats participant as the unit of analysis. The second recognizes the dependence in the data due to the group and, in essence, treats the group rather than the participant as the unit of analysis.

Table 21.2. Analysis Ignoring Dependence

Source	SS	df	MS	F	p
Instruction	234.83	1	234.83	4.25	.042
Variation between participants (Error)	4860.99	88	55.24		
Total	5095.82	89			

Analysis ignoring dependence

We start by ignoring the fact that there is a group structure to these data such that observations are grouped within levels of the independent variable. We simply conduct a one-way analysis of variance on all 90 observations. The results of this analysis are presented in Table 21.2. Note that because the independent variable in this design has only two levels, this ANOVA is equivalent to an independent t test.

From this analysis, we conclude that condition has a significant effect on the degree of liking, $F(1, 88) = 4.25$, $p = .042$, such that participants who received cooperative instructions liked their group better than those who received competitive instructions. Thus, if one ignored the possibility of dependence among observations due to group in this study, one would conclude that cooperating with group members leads to greater group liking than competing with group members.

Dealing with dependence: Multiple sources of error variation

If there is dependence in these data due to groups, then scores from participants from the same group will be more similar than scores from participants in different groups (given the likely situation of positive dependence). In essence, this means that the total error variation between participants can be subdivided into two classes, that which is between participants within the same groups and that which is between participants in different groups. To the extent that dependence due to groups exists in these data, then these two sources of error variation will differ. In the analysis of variance results given in Table 21.2, these two sources of error variation are mixed together to create a single composite error term, variation between participants.

More systematically, there are three sources of variation in the liking scores for the study that we are discussing. The first source of variation is *explained variation* due to the independent variable; it is the variation due to differences between scores from subjects in the competitive groups versus those in the cooperative groups. In the present data, the sum of squares due to the independent variable equals 234.83. The remaining sources of variation among the scores can be considered error variation because they reflect differences among scores that cannot be explained by knowing the level of the independent variable participants received. There are two possible sources of error variation in this

Table 21.3. Variance Decomposition for the Interaction Instruction Study

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>
Interaction instructions	234.83	1	234.83
Variation between groups (Error)	3490.85	28	124.67
Variation within groups (Error)	1370.14	60	22.84
Total	5095.82	89	

study: variation between groups and variation between participants within groups. *Variation between groups* reflects the fact that within levels of the independent variable, some groups have relatively high ratings on average while other groups have relatively low ratings on average. *Variation within groups* reflects the fact that within each group there are some participants who tend to give higher ratings while others give lower ratings. These two sources of error variation sum up to the total variation between participants (within levels of the independent variable).

A source table that presents all three sources of variation in these data is given in Table 21.3. The sum of squares due to the independent variable continues to equal what it did earlier. The sum of squares between groups (within levels of the independent variable) equals 3490.85 with 28 degrees of freedom (the number of groups minus 2). Finally, the sum of squares due to participants within groups (within levels of the independent variable) equals 1370.14 with 60 degrees of freedom (the number of participants in each group minus one times the number of groups). Both of these latter two sources of variation in the data can be considered in some sense error variation, because neither is attributable to the independent variable of interest. Unsurprisingly, they sum to the total error variation (variation between participants) in the data, 4860.99, with 88 degrees of freedom, which was the value of the error sum of squares used in the first analysis that ignored the threat of potential dependence in the data.

To say that there is dependence in the data due to groups is to say that these two sources of error variation, between groups and between participants within groups, are not homogeneous. Positive dependence means that scores within groups on average are more similar than scores between groups; negative dependence means the opposite. Comparing the two mean squares in the present example clearly indicates that observations in this hypothetical example are positively linked within groups; the mean square due to participants within groups is less than one-fifth of that between groups.

Given this heterogeneity of potential error terms, it should be apparent that our original analysis of these data, ignoring the potential dependence due to groups, is problematic. The error term in that analysis was clearly mixing up errors that come from two very different distributions, having very different variances. Given this, the next question is which of the two different error terms should one use in evaluating the effect of the independent variable? There are two choices: one can either compare the mean square due to treatment condition to the mean square between groups; or one can compare it to the mean square between participants within groups. A rationale for making this choice comes from the fact that the independent variable varies between groups, rather than between

Table 21.4. Complete Source Table for Interaction Instruction Study

Source	SS	df	MS	F	p
Interaction instructions	234.83	1	234.83	1.88	>.05
Variation between groups (Error)	3490.85	28	124.67		
Total between	3725.68	29			
Variation within groups (Error)	1370.14	60	22.84		
Total	5095.82	89			

participants within groups. That is, it is groups that have been randomly assigned to levels of the independent variable, not individual participants. And any effect attributable to that independent variable needs to be generalized across groups rather than across participants within groups. Another way of saying the same thing is to say that we expect groups to vary naturally in the mean level of liking that participants in those groups express. The question of whether the effect of the independent variable is statistically significant concerns whether the systematic variation between groups from different levels of the independent variable is greater than what one might expect given the naturally occurring variation among groups within levels of the independent variable.

Table 21.4 presents the source table that uses the between-group error term as the denominator of the F statistic for testing the effect of the independent variable. Note that we have grouped the three sources of variation in these data into two classes, those that are between groups and those that are within groups.

The presence of positive dependence in these data means that variation between participants within groups is smaller than that between participants who are in different groups. As a result, the correctly computed F statistic ($F_{1,28} = 1.88$, ns), using as its denominator the (relatively large) mean square error between groups, will necessarily be smaller than the computed F statistic that inappropriately ignored the dependence problem by using as its denominator the (relatively small) mean square error between participants ($F_{1,88} = 4.25$, $p < .05$). With negative dependence, the situation is reversed, with the correctly computed F being larger than that which is computed if dependence is inappropriately ignored.

Measuring and testing dependence

The informal assessment of dependence in these data that we gave above calculated the approximate ratio between the mean square due to groups and the mean square due to participants within groups. A better measure of dependence asks how large the difference is between the two mean squares relative to their total. This measure is called the intra-class correlation (ICC) and in the present design it is computed as:

$$ICC = \frac{MS_G - MS_{P/G}}{MS_G + MS_{P/G}(s - 1)}$$

where MS_G represents the mean square between groups (within levels of the independent variable), $MS_{P/G}$ represents the mean square between participants within groups, and s is the number of participants in each group. The ICC can range in value from $-1/(s-1)$ to $+1$ with negative values indicating negative dependence and positive values indicating positive dependence among observations. For the data at hand, the ICC equals:

$$\frac{124.672 - 22.836}{124.673 + 22.836(2)} = .598$$

which reflects rather substantial positive dependence in the data.

While the intraclass correlation estimates the relative difference in the variation between groups and within them, the ratio approach to assessing the degree of dependence in data is the appropriate procedure for testing whether the intraclass correlation differs significantly from zero. The ratio of two mean squares is distributed as an F statistic and can be used to test whether those two mean squares are significantly different from each other. Because one wants to reject the null hypothesis that the intraclass correlation equals zero when there is either positive or negative dependence in the data, the appropriate F statistic is computed by taking the larger of the two mean squares, MS_G or $MS_{P/G}$, and dividing it by the smaller of the two. In the data at hand, the resulting F , with 28 and 60 degrees of freedom, equals 5.46, leading us to conclude that there is significant dependence in these data.

Although this F test can be used to evaluate whether the intraclass correlation departs significantly from zero, it is not a very powerful test (Kenny, Kashy, & Bolger, 1998). Because of this, conclusions about the relative absence of dependence as a result of a nonsignificant intraclass correlation should be reached with considerable caution. Even when the intraclass correlation is relatively small and nonsignificant, tests of the effects of an independent variable when groups are nested under the levels of that independent variable can be seriously biased by the nonsignificant dependence induced by groups (Kenny, 1995).

To illustrate this, consider a situation where there are 10 groups of 8 participants each, with groups randomly assigned to the two levels of an independent variable. Assume that the mean square due to groups is 15 and that due to participants within groups is 10. Given these values, the intraclass correlation equals only .059. Its associated F statistic, with 8 and 70 degrees of freedom, equals 1.5, a nonsignificant value. One might be tempted to conclude that dependence should make very little difference to the results of a test of the effect of the independent variable, given the small value of the intraclass correlation and its nonsignificance. In fact, however, if dependence were ignored in the analysis, the error mean square for the F to test the effect of the independent variable would equal 10.51 (adding together the sums of squares due to group and due to participants within group and then dividing by the degrees of freedom for group and for participants within group). So rather than using the correct denominator for the F statistic computed for the effect of the independent variable (i.e., the mean square due to group, 15 with 8 degrees of freedom), the denominator of the F would be 10.51 (with 78 degrees of freedom). In spite of the very small size of the ICC and its nonsignificance, if one computed the F statistic to test the effect of the independent variable while ignoring dependence, then that F statistic would be nearly 50% larger than it would have been if one

Table 21.5. Complete Source Table for Dyad Study

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
X	39	1	39	8.67	<.025
Between groups (Error)	63	14	4.50		
Total between	102	15			
Within groups (Error)	72	16	4.50		
Total	174	31			

had done the appropriate analysis to eliminate the dependence in the data. This result, with analyses that ignore dependence being considerably different from those that do not, even in the presence of a nonsignificant intraclass correlation, is particularly likely to arise when the number of participants per group is large.

In light of the fact that computed F values can be substantially biased even when the intraclass correlation is relatively small and nonsignificant, we strongly recommend that dependence be assumed in general whenever groups are nested under levels of the independent variable. The consequence of this approach is that one uses the mean square between groups as the error term in calculating the significance of the effect of the independent variable rather than using the mean square between participants as the error term. Given this recommendation, it is important to illustrate what the consequences are of following this strategy even when there is in fact zero dependence induced by the group structure in the data. In the following example, we examine these consequences.

Assuming dependence when none exists

Table 21.5 displays a source table from a study where 16 dyads have been randomly assigned to two levels of the independent variable. With participants nested in dyads, dependence is likely to be a problem in these data. Hence the source table separates the variation due to groups (i.e., dyads) within levels of the independent variable, and participants within dyads, and the former is used as the error term in testing the significance of the effect of the independent variable. The fact that there is absolutely no dependence in this example is revealed by the equivalence of the mean square error between groups and the mean square error within groups, thus making the intraclass correlation equal to zero. Substantively, this means that on average pairs of individuals within dyads are no more or less similar than pairs of individuals in different dyads.

If one ignored the dyadic structure to these data and pooled the between and within error terms into a common error term, that pooled mean square error would equal 4.50 and would have an associated 30 degrees of freedom. Accordingly, the F statistic used to test the treatment effect would continue to equal 8.67 if the group structure to the data were ignored and all 32 observations treated as if they were independent of each other (which they in fact are). Accordingly, if one makes the conservative assumption of depen-

dence whenever there is a group structure to the data – even when in fact there is no dependence due to group – one will get exactly the same F statistic for the treatment effect as one would have obtained by treating the individual observations as if they were independent. In the calculation of the F statistic, therefore, there is no cost to assuming dependence due to groups when in fact dependence does not exist.

The only consequence of assuming dependence when there is none is that degrees of freedom for error for the F statistic for the independent variable would be inappropriately calculated. Rather than assuming that the error degrees of freedom actually equals the number of participants minus 2, one would be assuming that the error degrees of freedom equals the number of groups minus 2. Accordingly, although one would have calculated an F statistic that was equal in value to the F statistic one would have obtained if independence had been correctly assumed, one would compare that F statistic to a critical value having too few degrees of freedom in the denominator. In the present example, rather than comparing 8.67 to a critical F ($\alpha = .05$; 1, 30 df) of 4.17, one would look up the critical value (with 1 and 14 df) of 4.60. The consequence is that statistical power would decrease: one might not reject the null hypothesis that should be rejected given the appropriate degrees of freedom for error. In many cases, however, given a decently large number of groups from which data are collected, the difference in the two critical values is likely to be quite small.

Doing the analysis

The above discussion concerns the theoretical rationale for analyzing grouped data when groups are nested under levels of the independent variable. What we turn to briefly at this point are analytic strategies that accomplish the desired analyses (and one that does not).

The most straightforward way to analyze group data in this design is to form a single composite score from all the observations in each group. This composite score, typically the mean,² is then treated as the dependent variable in an analysis of variance, treating the group rather than the individual participant as the unit of analysis. The resulting F statistic will be identical to that which we have recommended computing above, treating the mean square due to group, rather than the mean square due to participant within group, as the appropriate error term.

It may seem that the above analysis represents a drastic solution, that one is throwing away a great deal of information by acting as if every group only contributed one observation to the analysis. But in fact the variation within groups really is not informative about the reliability of the treatment effect across groups. Additionally, to the extent that there are multiple members of each group, then the group means are less variable, and thus more reliable, than if each group only consisted of a single participant. Thus, having multiple participants in each group in fact does contribute to the stability of the group-level “observations” that form the basis for this recommended analysis.

Occasionally, researchers treat the individual participant as the unit of analysis, but attempt to deal with the dependence problem by partialing out groups in an analysis of the treatment effect. Typically they will do this by coding groups with a series of dummy

codes and then controlling for these in a multiple regression or through analysis of covariance. While this strategy effectively controls for group differences, it is equivalent to an analysis that treats the variation between participants within groups as the error term rather than treating the variation between groups as the error term. As a result, the analysis permits generalization of a treatment effect across participants within the particular groups examined, rather than allowing generalization across groups. In essence, this approach to the analysis is misguided because groups are treated as a fixed effect rather than a random one.

One final note regarding how analyses should be conducted when groups are nested under levels of the independent variable. It may sometimes be the case that group sizes vary. When data from such studies are analyzed using the group mean (or other composite score – see note 1) as the dependent variable, a weighted least squares analysis may be more appropriate than an ordinary least squares model, where group observations are weighted by the number of participants in each group.

Groups Crossed with Levels of the Independent Variable

Groups are crossed with an independent variable when all levels of the independent variable are represented within each group. Two cases need to be distinguished. In the first, there are exactly as many levels of the independent variable as there are group members, so that each participant in a group receives a different level of the independent variable from every other participant in that group and all levels are found in each group. In the second case, there are more group members than there are levels of the independent variable, so that more than one group member is found at each level. But again, all levels of the independent variable occur in each group. We begin this section of the chapter with a consideration of the first case before turning to the somewhat more complicated second case. Independent variables that are crossed with groups are also frequently referred to as within-group independent variables.

As an initial example, suppose that a researcher is interested in the effect of status or position held within a group on the degree to which one perceives he/she has control over group decisions. The researcher gathers data from 20 groups each with three participants. Within each group, he randomly assigns one participant to have high status, one to have moderate status, and one to have low status. The task at hand is to come to a series of group decisions. Following these, participants are asked to rate how much control they felt they had as individuals over the group decisions. Ratings are made on a scale from 1 (*very little control*) to 7 (*a lot of control*). The means and standard deviations for each condition are shown in Table 21.6.

Analysis ignoring dependence

As in the previous design, our examination of the data in the crossed example starts with an analysis that ignores the probable dependence among observations due to group. All

Table 21.6. Average Perceived Control as a Function of Status

<i>Status level</i>	<i>M</i>	<i>SD</i>	<i>n</i>
High	4.85	1.63	20
Moderate	4.35	1.46	20
Low	3.20	1.82	20

Table 21.7. Analysis Ignoring Dependence

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Status	28.63	2	14.32	5.28	<.05
Variation between participants (Error)	154.30	57	2.71		
Total	182.93	59			

60 observations are included in a one-way ANOVA, ignoring group, examining the effects of status on perceived control of group decisions. The results of this analysis are presented in Table 21.7.

One concludes from this analysis that there are significant effects of status on perceived control, $F(2, 57) = 5.28$; $p < .05$. Although due to the fact that this test has two degrees of freedom in the numerator, we don't know exactly where the status differences lie.³

Dealing with dependence: Multiple sources of error variation

As in the design where groups are nested under levels of the independent variable, the error term in the above source table that ignores the dependence in these data induced by groups can be broken down into error variation that is between groups and error variation that is between participants within groups. The between-groups portion of this error variance is conceptually quite clear, with groups crossed with levels of the independent variable. It represents simply the variation from group to group in their mean ratings of control: in some groups, perceptions of control are higher on average than in other groups. With groups fully crossed with the independent variable, this source of error variation is independent of the variation attributable to the independent variable.

The other source of error variation represents the interaction between groups and the independent variable. As in any crossed design, we can estimate independently the variation due to the independent variable, that due to groups, and that due to their interaction. This interaction captures the extent to which the difference due to the independent variable varies from group to group. If the mean differences due to status were exactly replicated in each group, the interaction would exactly equal zero. To the extent that the status differences vary from group to group, the interaction variation will depart from zero.

Table 21.8. Variance Decomposition for Crossed Within-Groups Independent Variable

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>
Status	28.63	2	14.32
Groups	108.93	19	5.73
Status \times Groups	45.37	38	1.19
Total	182.93	59	

The three sources of variation in these data, due to the independent variable, due to group, and due to their interaction are given in Table 21.8.

As in the previous design, to the extent that observations within group are more or less similar than observations between groups, there is dependence in the data due to groups. But in this case, since the independent variable varies within groups rather than between them, dependence can only be assessed after variation due to the independent variable within groups has been removed. The remaining variation is residual variation between participants within groups. The residual variation between participants within groups, over and above the variation within groups due to the independent variable, is what the interaction between groups and the independent variable (status) in the above source table is telling us about. Thus, in these data, the mean square due to participants within groups (over and above the independent variable) is 1.19 while that between groups is 5.73. Once again, these two mean squares are far from homogeneous, indicating substantial positive dependence. Pooling them into a common error term, as in the analysis reported in Table 21.7, makes little statistical sense.

Given this fact, the question is which source of error variation (due to groups or due to groups by status) is the appropriate error term for testing the effects of the independent variable. Each group provides a separate estimate of the effect of the independent variable. That is, we can calculate for each group the variation attributable to the independent variable, and this variation is exactly equivalent to the within-group variation for that particular group. What we would like to know is whether the differences due to the independent variable that occur on average, across all the groups, could have arisen by chance, simply from the naturally occurring variation within the various groups. In other words, we want to compare the variation due to status differences on average with the group-to-group variation in those status differences. Accordingly, the appropriate error term for testing the effect of the independent variable, since it varies within groups, is the group-by-status interaction. Table 21.9 presents the source table that contains the appropriate F statistic for testing the effects of the independent variable.

Notice that in this source table, once the dependence problem of heterogeneous error variation is addressed, the F statistic for the independent variable (status) is considerably larger than the F statistic computed in Table 21.7 where dependence was ignored. In general, in the crossed case with the number of participants in each group equal to the number of levels of the independent variable, positive dependence means that the com-

Table 21.9. Complete Source Table

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between groups	108.93	19	5.73	–	–
Within groups					
Status	28.63	2	14.32	11.99	.0001
Status × Group (Error)	45.37	38	1.19		
Within total	74.00	40			
Total	182.93	59			

puted F statistic when dependence is ignored will be too small, just the opposite from the nested design. In the case of negative dependence, the F that is computed if dependence is ignored in the crossed design will be too large, again just the opposite from the result in the nested design. These directional differences in the bias induced by positive and negative dependence between the two designs derive from the fact that in a nested design (where the independent variable is between groups) the appropriate error term is the between-groups component of error, while in the crossed design (where the independent variable varies within groups) the appropriate error term is the within-groups component of error. And positive dependence means that the former component is larger than the latter, while negative dependence means the reverse.

Designs with within-group replications

In the example that we have been discussing there are exactly as many participants in each group as there are levels of the independent variable. In many crossed designs, this is not the case and, as a result, the analysis is a bit more complicated. Suppose that there were only two levels of status, high and low, and in each group there were four participants with two of them assigned to each level of status. There now are four sources of variation in these data: variation between groups, variation within groups due to the status difference, group-to-group variation in the difference due to status (i.e., the status by group interaction), and variation due to differences between participants in the same groups who are at the same levels of status. This last source of variation is new. Only with multiple participants in each group at each level of the independent variable will there be within-group, within levels of the independent variable, variation from one participant to another. All four sources of variation in this design are laid out in Table 21.10, assuming that there are 20 four-person groups from which data have been collected.

Notice that in this source table, we have continued to treat the status-by-group interaction as the error term for testing the significance of the effect of the within-group independent variable. The rationale for this choice of error terms is exactly that given in the earlier design that did not include replications. Namely, we have an estimate of the effect of the independent variable in each group and to assess whether the average of those

Table 21.10. Source Table for Crossed Independent Variable with Within-Group Replications

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between groups	95	19	5		
Within groups					
Status	15	1	15	5	<.05
Status × Group	57	19	3		
Participants within status × Group (Error)	100	40	2.5		
Within total	152	60			
Total	247	79			

within-group effects is significant, we want to compare it to their variation from group to group.

If the group structure of these data were ignored and all 80 participants (20 groups times four participants in each) were treated as independent observations, then the mean square due to status would continue to be 15, with 1 degree of freedom, but the mean square error would be the pooled mean squares due to groups, status by group, and participants within status by group from Table 21.10. In other words, the error mean square if participants were treated as independent (i.e., as the unit of analysis) would be:

$$\frac{95 + 57 + 100}{19 + 19 + 40} = 3.23$$

and the *F* for the effect of status would turn out to equal 4.64.

In this design, there are two possible sources of dependence of observations that are in the same group. First, observations that are in the same group may be more similar than observations between groups (controlling for the independent variable). Equivalently, there are differences due to which group an observation comes from. Second, observations that are in the same group and in the same level of the independent variable may be more similar than observations that are in the same group but in different levels of the independent variable (again controlling for the overall effect of that independent variable). This is equivalent to saying that there are group-to-group differences in the effect of the independent variable. In the first crossed design we considered, with a single observation in each group at each level of the independent variable, only the first of these two sources of dependence could be estimated.

If the individual participant is inappropriately treated as the unit of analysis, ignoring these two potential sources of dependence, the direction of bias in the *F* statistic is not clear, since the effects of these two sources of bias are opposite each other. Positive dependence due to groups (the first source defined above) means that the inappropriate *F* will be smaller than it ought to be (as in the crossed design without replications). Positive dependence due to the second source (i.e., more similarity within levels of the independent variable within groups than between levels of the independent variable over and above the effect of that variable) results in the inappropriate *F* being too large. Kenny et al. (1998) suggest that the first of these two sources of dependence is likely to be more

substantial, but this need not necessarily be the case. Hence, in crossed designs with replications, the direction of bias as a function of dependence is somewhat unclear.

Measuring and testing dependence

To assess both kinds of dependence in this design, we once again use the intraclass correlation. Now there are two such correlations to test. The first estimates the magnitude of the dependence due to groups. It compares the mean square due to groups to that due to individual participants within groups and within levels of the independent variable:

$$ICC_G = \frac{MS_G - MS_{P/G \times S}}{MS_G + MS_{P/G \times S}(s-1)}$$

where MS_G is the mean square due to group, $MS_{P/G \times S}$ is the mean square due to participants within the group by status (the independent variable) interaction, and s is the number of participants in each group. In the above data, this intraclass correlation equals .167.

Whether or not this intraclass correlation is significantly different from zero is tested by forming the F ratio between these two mean squares: $F(19,40) = 5/2.5 = 2$, a significant value. Thus, there is significant positive dependence in these data due to groups; observations within groups are more similar than observations between groups within levels of the independent variable.

The second intraclass correlation is that due to the interaction between group and the independent variable. It is given by:

$$ICC_{G \times S} = \frac{MS_{G \times S} - MS_{P/G \times S}}{MS_{G \times S} + MS_{P/G \times S}(s/k-1)}$$

Here $MS_{G \times S}$ is the mean square due to the group-by-status interaction and k equals the number of levels of the independent variable (status). For these data, this intraclass correlation equals .062. The F ratio for testing whether it differs from zero equals $3/2.5 = 1.2$ with 19 and 40 degrees of freedom. Thus, there is some small but nonsignificant dependence due to the group-by-status interaction, meaning that observations in the same level of status within groups are on average slightly more similar than observations in different levels of status within groups, once the overall effect of the independent variable has been controlled. In other words, the group-by-status interaction affects responses.

In the simpler form of this design, where only a single participant is found at each level of the independent variable within each group, only the first of these two intraclass correlations can be computed. Since the participant within the group-by-status interaction effect in that design is confounded with the group-by-status interaction, one substitutes the mean square due to that interaction ($MS_{G \times S}$) for $MS_{P/G \times S}$ in the formula for the intraclass correlation due to group.

Doing the analysis

The general recommendation for designs where the independent variable is crossed with groups, regardless of whether there are multiple participants in each group at each level

of the independent variable, is that the mean square due to the group by independent variable interaction be used as the error term in testing the effect of the independent variable. A full decomposition of the sources of variation in the design, along the lines of Tables 21.9 or 21.10 (depending on whether there are within-group replications) permits the appropriate error term to be identified and the magnitude of dependence to be estimated.

In the case of independent variables having only two levels, the recommended analysis is readily accomplished by computing for each group a difference score between the responses from those group members at one level of the independent variable and those at the other level. The appropriate test then is conducted by examining whether the mean difference score, calculated across groups, is significantly different from zero, treating groups as the unit of analysis (equivalently, one could conduct a dependent t test on the mean difference scores treating group as the unit of analysis). The F statistic that results from this test (or the t) will exactly equal that from the full analysis of variance decomposition, appropriately using the group by independent variable interaction as the error term (see Judd & McClelland, 1989).

In the case of independent variables having more than two levels, this difference score approach can be extended if there are single degree of freedom a priori comparisons to test among those multiple levels. For each group, compute a difference score, weighting the responses of the group members by the weights assigned to the various levels of the independent variable according to the a priori contrast(s). Then test whether the mean within-group contrast score differs significantly from zero. This approach has the added advantage that each specific comparison is tested by comparing its mean square to the mean square error due to the interaction of groups with that specific contrast. In other words, instead of using a pooled groups by independent variable interaction term as the error term, this approach appropriately estimates the error mean square for each individual comparison among the levels of the independent variable.

Multiple Independent Variables

To this point, we have considered research designs in which there is either one independent variable under which groups are nested (a between-groups independent variable) or one independent variable that is crossed with groups (a within-groups independent variable). Of course, many designs involve multiple independent variables. These may all be between-groups, all within-groups, or both sorts of independent variables may be present in what is called a mixed design. The analysis of these more complicated designs involves a relatively simple extension of the data analysis approach presented thus far in the chapter. The important point in analyzing any multiple-variable design is that group-induced dependence means that there are heterogeneous error terms that are inappropriately pooled together if the dependence is ignored and participants are treated as independent observations. The appropriate analysis separates out these various potential error terms and then uses the appropriate ones, depending on whether the independent variables vary within groups or between them.

Multiple between-group independent variables

The easiest extension occurs when there are multiple crossed independent variables and groups are nested under the cells of this crossed design. For instance, groups are randomly assigned to one of four conditions created by crossing whether the group members cooperate or compete with each other and whether group identities are made salient or not. With this design, there are five different sources of variation in the data, variation due to the main effect of cooperation versus competition, variation due to the main effect of whether group identities are salient or not, variation due to the interaction of these two factors, error variation that is between groups, and finally error variation that is within groups. The assessment of whether or not dependence is present in the data comes from the comparison of these latter two sources of error variation, asking whether there is more (or less) variation between groups (over and above the effects of the independent variables) than within groups. The formulas that we gave earlier for the intraclass correlation and the F statistic to test whether there is significant group-induced dependence also apply in this situation, once the variation due to both independent variables and their interaction from the total between groups sum of squares has been removed.

The appropriate error term for testing the two main effects and their interaction is the mean square due to groups within levels of the independent variables. This is a pooled error term, assuming that group-to-group variation is homogeneous in each of the four cells of the research design. Equivalent F statistics for testing the two main effects and their interaction are obtained if a mean value for each group on the dependent variable is computed, and then a two-way analysis of variance on these group means is conducted, treating group as the unit of analysis. Again, this approach to conducting the analysis may seem to be ignoring a lot of the data, since it assumes that there is only a single score from each group. As explained previously, however, it is generalization across groups that is required and hence the error variation must derive from the variation between groups rather than within them. Additionally, of course, multiple observations within groups means that the group means are relatively more stable than are individual observations.

Multiple within-group independent variables

Designs with multiple independent variables that vary within groups are a bit more complicated, since for each independent variable the variation due to that variable (on average within groups) as well as the variation due to group-to-group differences in the effect of that variable (the interaction between the independent variable and groups) cannot be computed. These interaction terms need to be used as the error terms in testing the effects of each independent variable (and their interactions). Thus, there are as many different error terms as there are treatment effects to be tested. Additionally, if there are multiple participants within each group at each of the levels of the independent variables (i.e., within-group replications), then variation attributable to participants within the independent variable by groups' interaction can be calculated. As in the earlier case where we

Table 21.11. Variance Decomposition for Crossed Within-Group Independent Variables

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>
Between groups		1	
Within groups			
Gender		1	
Gender \times Group (Error)		11	
Status		1	
Status \times Group (Error)		11	
Gender \times Status		1	
Gender \times Status \times Group (Error)		11	
Within total		36	
Total		47	

considered only one within-groups independent variable, there are multiple sources of dependence in a design that includes within-groups replications. As a result, the direction of the bias in a statistical inference test if dependence is ignored is unclear.

To illustrate the design without the complicating factor of multiple within-group replications, suppose that participants interacted in groups of four. Each group consisted of two males and two females, so gender varied within groups. Additionally, in each group, one male and one female were assigned to high-status positions and one male and one female were assigned to low-status positions. Accordingly, in each group there is a 2×2 crossed design, with one participant in each cell of this design. The two crossed factors are gender and status. A total of 12 groups are run.

Given this design, a full decomposition of the sum of squares yields seven sources of variance, listed in Table 21.11. The basic decomposition of variance in this design that attends to group-induced dependence in the data separates the between-group error variance from the error variance that is within groups. But now, within groups, there is variation attributable to the two different independent variables and their interaction. Additionally, the error variance within groups can be broken down into three different sources. The first within-group error term, Gender \times Group, estimates the group-to-group variation in the magnitude of the gender effect. The second, Status \times Group, estimates the group-to-group variation in the magnitude of the status effect. And the final term, Gender \times Status \times Group, estimates the group-to-group variation in the interaction. Commonly these three error terms are pooled or averaged into a single within-group error term that is used to test the effects of the independent variables. Additionally, this pooled error term can be used in the computation of the intraclass correlation, comparing its magnitude to the variability between groups. It is entirely possible, however, that these three within-group error terms differ in magnitude, in which case using a pooled or common error term for testing the three within-group effects is likely to be misleading. Technically, the use of such a pooled error term is likely to lead to violations of the sphericity or homogeneity of within-subject differences assumption in traditional repeated

Table 21.12. Example Data for Multiple Within-Group Independent Variable Design (with replications – Scores in each cell are from two different participants)

	<i>Female participants</i>		<i>Male participants</i>	
	<i>Low status</i>	<i>High status</i>	<i>Low status</i>	<i>High status</i>
Group				
1	5, 4	8, 7	6, 5	7, 6
2	7, 5	6, 6	7, 6	6, 6
3	4, 4	6, 7	5, 4	6, 7
4	5, 6	7, 8	6, 6	7, 8
5	7, 7	9, 8	8, 7	9, 8
6	5, 4	6, 5	5, 5	6, 5

measures analysis of variance. Of course, if the three error terms are of different magnitudes, then one can estimate three different intraclass correlations, comparing variation between groups to each of the three within-group components of error.

If there are replication participants in each group, then an additional within-group component of variance can be estimated, that attributable to participant-to-participant differences within groups (and within levels of the independent variables) over and above the effects of the independent variables. In this case, as in the earlier case with only one within-groups independent variable, there exists the possibility of dependence both due to groups and due to treatment within groups. Nevertheless, the appropriate error term for testing the effect of any within-group independent variable (or the interaction among multiple within-group independent variables) remains the interaction between that variable and groups.

It continues to be the case that the appropriate analysis, regardless of whether there are within-group replications, is most easily accomplished by computing a series of difference scores for each group, contrast coding the within-group independent variables (and their interactions) and then computing a difference score for each group according to each contrast code. Then simply testing whether the mean of each difference score, averaging across groups, is significantly different from zero, using the standard error of the difference, computed across groups, as the error term. This analysis is equivalent to the full within-groups analysis of variance in which variation due to each within-group independent variable (and their interactions) is tested by comparing it to the interaction between that variable and groups.

To illustrate, consider the hypothetical data of Table 21.12, using the design described earlier where there are two crossed independent variables: gender and status, and both of these vary within groups. We have added replications to the design but cut down on the number of groups just to make things more manageable. There are now eight participants in each group, four males and four females, with two of each gender high status and two low status. In total data are gathered from 48 participants in six groups.

A full analysis of variance source table for these data is given in Table 21.13. In this source table, each of the effects of interest (Gender, Status, and Gender \times Status) is tested

Table 21.13. Variance Decomposition for Crossed Within-Group Independent Variables

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between groups	38.94	5	7.79	
Within groups				
Gender	0.52	1	0.52	25.00
Gender \times Group (Error)	0.10	5	0.02	
Status	20.02	1	20.02	11.63
Status \times Group (Error)	8.60	5	1.72	
Gender \times Status	1.69	1	1.69	9.00
Gender \times Status \times Group (Error)	.94	5	0.19	
Participants within $G \times S \times G$	10.50	24	0.44	
Within total		42		
Total		47		

by dividing its mean square by the interaction between that effect and group. For instance, the F for testing the Gender main effect is computed by dividing the mean square due to gender by the mean square error due to the Gender-by-Group interaction. This treats group as a random factor, asking whether the gender effect in each group can be generalized across groups.

If the group-induced dependence were ignored in these data, and individual participants were treated as the unit of analysis, all of the sources of variance other than the mean squares due to Gender, Status, and their interaction would have been pooled into a single error term that would be used inappropriately to test the effects of the independent variable. In these data, the inappropriate F s (all with 1 and 44 degrees of freedom) would have been 0.39 (Gender), 14.91 (Status), and 1.26 (Gender \times Status); clearly all three would have been far too small in these data. Moreover, the inappropriately derived F s would have led to incorrect conclusions regarding the effect of both gender and the gender-by-status interaction.

Note also what happens if one simply “controls” for group, by including it as a factor in the analysis (along with its interactions with the independent variables). In this case, the replications mean square (i.e., participants within Gender \times Status \times Group) would have been used as the common error term, again resulting in substantially different F values. Such an analysis treats group as a fixed effect, thus permitting generalization across participants but only in these six groups, rather than across the population of groups from which these have been sampled.

The full source table can be readily obtained by any analysis of variance program. If a repeated-measures analysis of variance program is used, then group must be treated as the unit of analysis and the factors identified as within-group factors. Most such programs will employ a pooled within-groups error term which should be divided up into its appropriate components. Alternatively, a between-participants analysis of variance program can be used, defining the between-participants factors as Group, Gender, Status,

Table 21.14. Mean Within-Group Differences due to the Independent Variables

<i>Group</i>	<i>Gender contrast</i>	<i>Status contrast</i>	<i>Gender × Status contrast</i>
1	0	8	-4
2	1	-1	-1
3	1	9	-1
4	1	7	-1
5	1	5	-1
6	1	3	-1
Mean	0.83	5.17	-1.50
Standard deviation	0.41	3.71	1.22

and including all of their interactions. This will output the correctly computed mean squares for all the sources of variation, although it will use an inappropriate error term for tests of effects. Accordingly, the F statistics will need to be recomputed using the appropriate error terms, as described above.

As already discussed, the correct F s can also be easily obtained by calculating difference scores for each group, estimating the mean difference in each group due to Gender, due to Status, and due to the Gender-by-Status interaction, and then testing whether these mean differences significantly depart from zero. These three difference scores are presented in Table 21.14. The Gender difference subtracts the female scores from the male ones (i.e., contrast weights of 1 if male, -1 if female), the Status difference is high (+1) status minus low (-1), and the interaction uses contrast weights that are the product of these two contrasts.

Single sample t tests (with n equal to the number of groups) can be used to test whether each of these three means are significantly different from zero. The resulting t s (all with 5 degrees of freedom) equal 5.00 (Gender), 3.41 (Status), and -3.00 (Gender \times Status). Squaring these t s yields exactly the correctly computed F statistics from the analysis of variance source table given in Table 21.13.

Mixed designs

A mixed design is when multiple independent variables are used, but some vary within groups and others between groups. The basics of the analysis of such designs are laid out in the above sections, treating the within-group and between-group variables as described in these sections. There is one additional complication: interactions that involve one or more between-group factors and one or more within-group factors are tested by using the appropriate within-groups error term.

To illustrate, we add a between-group independent variable to the design just discussed: there are eight participants in each of 12 groups. These groups have been randomly assigned to either a competitive interaction or a cooperative one, and within groups,

Table 21.15. Variance Decomposition for Mixed Design: Cooperation/Competition between Groups; Gender and Status within Groups

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>
Between groups			
Cooperation/Competition		1	
Error between		10	
Between total		11	
Within groups			
Gender		1	
Gender \times Cooperation		1	
Gender \times Group within Cooperation (Error)		10	
Status		1	
Status \times Cooperation		1	
Status \times Group within Cooperation (Error)		10	
Gender \times Status		1	
Gender \times Status \times Cooperation		1	
Gender \times Status \times Group within Cooperation (Error)		10	
Participants within Gender \times Status \times Group		48	
Within total		84	
Total		95	

gender and status vary, with two participants in each cell of the Gender-by-Status crossed design.

Once again, the basic decomposition to deal with the group-induced dependence issue is to separate out between-group variation in the data from within-group variation. And both of these sources get divided up into mean squares due to the effects of interest and error terms. The full source table is given in Table 21.15.

The main effect of the between-group independent variable is tested by comparing it to the error variation between groups. The within-groups portion of the source table involves additional rows that represent variation due to the interactions between the within-groups factors and the between-groups factor. For instance, we now have both a row for the Gender factor and its interaction with Cooperation/Competition factor. This interaction is tested by using as an error term the interaction between Gender and Group.

Commonly available analysis of variance programs can be used to provide the above source table, although modifications to computed F statistics may be necessary to insure that the appropriate error terms are used. Additionally, as described in Judd and McClelland (1989), a regression-based approach relying on within-group and between-group contrast coded variables can be utilized. This approach is an integration and generalization of the analysis of group averages and group differences discussed in the previous sections of this chapter.

Table 21.16. Satisfaction and Number of Attempts to Exert Authority by Group

<i>Person</i>	<i>Group 1</i>		<i>Group 2</i>		<i>Group 3</i>		<i>Group 4</i>		<i>Group 5</i>		<i>Group 6</i>	
	<i>Att</i>	<i>Sat</i>										
1	4	5	6	7	3	2	6	7	8	6	9	9
2	3	4	7	4	6	5	5	8	7	8	2	3
3	7	8	2	5	8	6	2	6	3	3	5	6
4	6	7	3	3	4	3	7	9	3	4	6	8
5	1	5	4	3	7	6	3	5	2	3	3	5
6	6	6	9	6	6	5	3	5	1	2	4	6
7	3	6	8	5	9	7	2	4	3	4	6	8
8	5	7	5	6	7	5	3	6	4	6	7	8
Mean	4.4	6.0	5.5	4.7	6.2	4.9	3.9	6.2	3.9	4.5	5.2	6.6

Independent Variables that Vary both within and between Groups

All of the designs that we have discussed to this point have involved independent variables that have discrete levels and that are manipulated or allowed to vary either within groups or between them. Although such independent variables are typically used in experimental studies of group phenomena, many group studies also involve the observation of real groups, involving measured rather than manipulated independent variables. Accordingly, these independent variables are likely to take on a wide range of possible values, rather than the few levels typically used with manipulated independent variables. Additionally, they are quite likely to vary simultaneously within groups and between them.

Consider a simple example. A researcher is interested in the relationship between the degree to which individuals in groups attempt to exert authority and their satisfaction with the group. Six groups, of eight people each, are observed for a one-hour period. The behavior of each person in each group is coded, focusing on the amount of time that person talks, the number of interruptions made by that person, and a variety of other variables designed to measure attempts to exert authority. From these, a single composite measure of such attempts by each individual is derived, with values varying between 1 and 10. At the end of the hour, each participant is asked to indicate his or her satisfaction with the group. The resulting data are presented in Table 21.16, with Att indicating attempts to exert authority and Sat indicating stated satisfaction. Note that Person in this table refers to a given, randomly ordered participant with a group.

Conceptually, the independent variable is thought to be authority attempts (Att), even though it is a measured rather than a manipulated variable. Inspection of the mean values of this variable for each group clearly shows that it varies between groups. For instance, the mean level of this variable in Group 3 is 6.2 while in Groups 4 and 5, its mean is only 3.9. Additionally, Att clearly varies within groups as well, with some participants in each group showing higher levels of attempts to exert authority than other participants in the same group.

Due to the fact that the independent variable varies both within and between groups and to the fact that groups likely induce dependence, it is not appropriate to conduct a single analysis of the effect of Att on Sat, treating the individual participant as the unit of analysis and ignoring the group structure to the data. Instead, it is necessary to conduct separate analyses within groups and between groups, estimating the effect of Att on Sat in each case, and using the appropriate between-group or within-group error term.

For the between-group aspect of this relationship, we will follow the general procedure recommended previously for the analysis of between-group independent variables: We compute a mean value for each group on the dependent variable, averaging across all the participants in the group, and then ask whether this mean varies as a function of the independent variable. In other words, can the group mean on the dependent variable be predicted from the mean value on the independent variable? To answer this question we regress the Sat mean values on the Att mean values shown in the last row of the table (with groups as the unit of analysis). The resulting simple regression equation is:

$$\text{MeanSat} = 6.44 - 0.19 \text{ MeanAtt} \quad r^2 = .04; \quad t(4) = -0.43$$

Thus, between groups there is a nonsignificant negative relationship between authority attempts and satisfaction. If the relationship were significant, we would end up concluding that in groups where group members typically attempt to exert authority more, there was less satisfaction.

But this is only part of the story. It completely ignores the possibility that there is covariation between the independent and dependent variables within groups. We want to assess such covariation and then ask whether it is significant across groups, treating them as a random factor across which generalization is sought. Earlier, in discussing the analysis of independent variables that varied within groups, we calculated a difference or contrast score for each group that assessed the difference in each group on the dependent variable across the levels of the independent variable. We can adopt the same strategy here, although a common set of contrast weights for each group cannot be used since participants in each group are associated with a lot of different levels of the independent variable. Instead, to estimate how the dependent variable varies in each group as the independent variable varies in that group, we can estimate a simple regression equation for each group, regressing Sat on Att. These within-group regression equations are given below:

- Group 1 Sat = 3.80 + 0.50 Att
- Group 2 Sat = 3.57 + 0.21 Att
- Group 3 Sat = -0.18 + 0.81 Att
- Group 4 Sat = 3.25 + 0.77 Att
- Group 5 Sat = 1.70 + 0.72 Att
- Group 6 Sat = 2.23 + 0.84 Att

The simple regression coefficients or slopes in these equations capture the linear covariation between the two variables: they tell us the amount of difference on the dependent

variable associated with a one-unit difference on the independent variable, just as our earlier within-group difference scores did. Now we want to ask about the significance of these within-group relationships, asking whether across groups they are significantly different from zero. The mean slope across the six groups equals 0.64 with a standard deviation of 0.24. A test of whether this mean slope differs significantly from zero yields a t (with 5 degrees of freedom) of 6.51. Thus, within groups, there is on average a significant positive relationship between attempts to exert influence and satisfaction with the group.

Since our independent variable in this example varies both within groups and between groups and since, given the likely presence of group-induced dependence in these data, within-group error variation and between-group error variation are not homogeneous, two separate tests of the relationship between the independent and dependent variables were necessary. And these two separate tests reached rather different conclusions. Between groups, there was a nonsignificant negative relationship, while within groups there was highly significant positive relationship. While this result may seem counterintuitive, in fact in the absence of random assignment of participants within groups to levels of the independent variable, it can commonly occur. For whatever reason, in our data groups where participants attempt to exert more authority are groups that elicit less satisfaction from group members (nonsignificantly), while within groups those participants who attempt to exert relatively more authority, relative to other members of that same group, tend to express higher satisfaction with the group. Although a more complex picture of the effect of the independent variable may emerge from an analysis that separates its within-group versus between-group effects on the dependent variable, it is important to note that such an analysis provides a more meaningful and comprehensive reflection of the data.

Generalizations

The simplicity of the above example is deceptive. In fact, the general approach that we have outlined is exceedingly flexible, permitting us to look at the effects of continuous varying independent variables in group research, when these vary both within and between groups, in a wide range of situations. The approach can handle groups of different sizes, missing data, and other “messy” situations, although accommodations to weight groups differentially to take account of the varying reliability of the effect estimates from group to group may be considered. Additionally, exceedingly more complex questions could be asked, given the assessment of multiple independent variables. For instance, perhaps group size is an independent variable that might moderate the within-group relationship between attempts to exert authority and expressed satisfaction. To test this hypothesis, one could examine whether the within-group slopes that estimate the relationship between authority attempts and satisfaction can be predicted by group size.

It is important to note that this general approach to examining effects in group data is conceptually similar to what is called hierarchical linear modeling or multilevel modeling (Bryk & Raudenbush, 1992; Goldstein, 1995; Hoeksma & Koomen, 1992; Kref

& de Leeuw, 1998; Nezlek & Zyzniewski, 1998; Pollack, 1998). Our exposition has relied on straightforward ordinary least squares estimation procedures. Programs that are available for multilevel modeling (e.g., HLM; Bryk, Raudenbush, & Congdon, 1994) generally rely on other estimation procedures. Nevertheless, the general approach that we have outlined is very flexible and quite easily implemented. Additionally, no new statistical software is needed. The approach relies upon a simple extension of widely available regression and analysis of variance procedures.

Conclusion

Dependence in data occurs when observations from participants within groups are more similar or dissimilar than observations from participants in different groups. Such dependence is likely to arise in group data not only because of social interaction in groups but also because of a host of other factors that are likely to affect the variation of observations within and between groups. In general, researchers should assume that dependence is likely to exist whenever a group data structure exists.

In the presence of dependence, analyses which treat participants as the unit of analysis and effectively ignore the group-induced dependence are potentially seriously biased. Some have recommended testing whether dependence exists in group data structures by testing the intraclass correlation (ICC) and worrying about dependence only if a significant ICC is found. We do not make such a recommendation because the test of the ICC is a relatively low power test. Additionally, dependence, even if nonsignificant, can seriously bias tests of independent variables.

Analyses which effectively deal with dependence in group data are analyses that essentially treat the group as the unit of analysis. In the case of independent variables that vary between groups, the appropriate error term is thus the variation between groups within levels of the independent variable. In the case of independent variables that vary within groups, then the appropriate error term is the variation due to the interaction between groups and the independent variable. Independent variables that vary both within and between groups can be tested at both levels.

Our recommendation has been to assume that dependence exists whenever there is a group structure present in the data which may give rise to dependence. This may seem to some to be an extreme recommendation by those who regard the use of groups as the unit of analysis as a low power approach, particularly if dependence is relatively weak. However, as we have shown, the power consequences of inappropriately assuming dependence is present when it is not in fact are relatively minimal. Accordingly, in most situations it seems to us that the appropriate and not overly conservative strategy is to treat group data as if dependence were a problem to be dealt with.

We started this chapter by noting that for many reasons research on groups is exceedingly challenging to conduct. We hope that the present exposition of group data analysis reduces those challenges somewhat. There is nothing inherently difficult to the analysis of group data, once one appreciates the multiple sources of variation that exist in group data structures and treats groups as the effective unit of analysis.

Notes

- 1 The *ns* in this table refer to the number of participants, not the number of groups.
- 2 Using the mean will give the correct *F* statistic for the effect of the independent variable. To preserve the sums of squares in the individual observations, the composite score should be computed as the sum of the observations in each group divided by the square root of the number of observations (see Judd & McClelland, 1989).
- 3 At a later point, we return to this issue and discuss the advantages of analytic procedures that allow the testing of within-group single degree of freedom contrasts.

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CHAPTER TWENTY-TWO

Observation and Analysis of Group Interaction over Time: Some Methodological and Strategic Choices

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This chapter discusses methods by which researchers can study group interaction. By “group interaction” we mean *the simultaneous and sequential behaviors (verbal and motor) of group members as they act in relation to one another and to the tasks that the group is trying to accomplish, over time*. Only a relatively small proportion of group research examines any aspects of ongoing group interaction, often because doing so is relatively costly in time, effort, and other resources. We would argue, however, that *not* doing so is more costly still, if we intend to understand what groups are like and how they act.

Researchers studying individual psychological processes often lament the fact that many of the important intervening processes that link their inputs and outputs take place within the individual and are not directly accessible to the researcher. In contrast, researchers studying groups *do* have access to their equivalent of the intrapersonal “black box” – at least they do in principle. Group researchers can observe the ongoing interaction among group members more or less directly. All too often, though, group researchers fall back on the same strategies used in individual-level studies: either measuring “process” by retrospective questionnaires, or measuring only inputs and outputs and simply making inferences and assumptions about what went on in between.

Researchers using input–output designs not only miss potential “connecting links” between the manipulated independent variables and the measured dependent variables over some relatively short period of time that characterizes most experimental research on groups. They also forego any opportunity to get information about the ongoing dynamics by which groups form, develop, adapt to conditions in their embedding environments, produce and deliver products, and sometimes learn to do all of those things better, over extended periods of time. We need group interaction process data in order

to find out about these dynamic processes by which such groups do what they do, and modify both themselves and their activities, over time.

The study of group interaction process is a topic of interest within a number of social and behavioral science disciplines. In addition to social psychology, these include: speech and communication fields, management and administrative science fields, some areas of political science, sociology, educational research, and developmental and clinical psychology. There already are a number of excellent reviews of group interaction process methods that have appeared in recent years. Some are specialized with respect to particular disciplines or topics. Reviews we have found helpful include: Amidon and Hunter (1967); Bonita and Hollingshead (1997); Borke (1967); Folger, Hewes, and Poole (1984); Futoran, Kelly, and McGrath (1989); Heyns and Zander (1965); Hirokawa (1988); Kelly (1998); Poole and Doelger (1986); Poole, Folger, and Hewes (1987); Poole and McPhee (1985); Trujillo (1986); and Weingart (1997). We have drawn heavily upon those reviews in constructing this chapter, and we urge readers to consult them for more detailed treatment of particular topical areas or systems.

The main thrust of this chapter will be to lay out a set of choices that a researcher must deal with when he or she undertakes the observation and analysis of group interaction, and to discuss some of the opportunities and limitations posed by those various choices. We will not describe any particular interaction analysis systems in detail. Nor will we present any substantive findings that have been “discovered” by means of interaction analysis. We will also not advocate any general type of interaction coding or analysis system, much less propose that a particular one is preferable to all others.

Organization of the chapter

A researcher interested in studying group interaction process faces three basic steps:

- 1 Obtaining information about the interactions of some set of groups for some period of time. We will refer to this step as *recording*.
- 2 Transforming that information into data – that is, into some systematic set of qualitative or quantitative distinctions. We will refer to this step as *coding*.
- 3 Processing (qualitatively or quantitatively) and comparing subsets of those data, and interpreting the “meaning” of those comparisons. We will refer to this step as *analysis*.

These three activities are conceptually distinct, although they can and often do blend together in practice. For example: certain strategies for recording preclude the need for coding; and various forms of coding greatly limit the possibilities for analysis. We will discuss these three steps in the three main parts of the chapter.

There are four main strategies one can use in the recording step. These four strategies differ from one another in terms of time and cost, and the quality and scope of the potential information they can yield. They are discussed briefly in Part I of this chapter.

There is a multitude of alternative strategies that can be used for the coding step. Choices among them are crucial. Those choices are limited by what was done in the recording step, and they in turn determine and constrain what can be done in the analy-

sis step. A major portion of this chapter, Part II, will be devoted to considering alternative coding strategies and their advantages and limitations.

There is also a multitude of alternative strategies for analysis. Which ones are useful depend on the researcher's purposes. Which ones can be used, however, depend on the choices made within the two earlier steps, as well as on the time and resources available to the researcher. Alternative analysis strategies and their advantages and limitations will be the topic of Part III of the chapter. (We limit our discussion of analysis methods to those involving quantitative analyses. For useful discussions of methods for qualitative analysis of interaction data see Antaki, 1988; Cicourel, 1981; Coulthard, 1977; Jacobs, 1994; Labov & Fanshel, 1977.)

The chapter ends with a brief discussion of some strategic choices the researcher faces when he or she sets out to observe and analyze group interaction. These are discussed in the form of several "quasi-rules" that can guide such work.

Definitional distinctions

The three steps each entail the specification of an important definitional distinction. Step one, recording, establishes what will be included within the overall scope of activities that will be included in a given group's interaction process record. It establishes what action modalities can be taken into account (visual, verbal/textual, paralinguistic, nonverbal, and so on), how comprehensively and in what manner the group's interaction activities will be sampled, whether the actions of certain actors who are "outsiders" rather than members of the group (e.g., managers) will be included in the record, and so on. Step two, coding, establishes what will be the unit of activity, and which properties (e.g., speaker, target, type of act, length of act, and so on) will be used to distinguish one unit act from another. Step three, analysis, hinges on which aspects of unit acts will be aggregated over for counting, quantification, or simplification purposes, and which aspects will be retained as distinctions for potential comparisons in analysis. These three definitional distinctions are discussed further in the context of the discussions of the three steps, respectively.

In each part, we will cite and discuss various systems that have been used in past group research, as exemplars of particular methods or approaches, or as illustrations of various conceptual issues, but we do not intend to be comprehensive. There is probably not enough space in this chapter to list, let alone to discuss, every group interaction recording, coding, or analysis system that has ever been used. Our intent, rather, is to provide a conceptual framework that captures key features of the major alternative approaches, and to discuss some critical issues facing users of systems within each region of the space defined by that framework.

Part I: Acquiring a Record Containing Information about Group Interaction

Four general strategies for obtaining information about group interaction are shown in Table 22.1 and discussed, in turn, in this section.

Table 22.1. Four General Strategies for Obtaining Information about Group Interaction

Inferring interaction from input–output relations

(No record of interaction behavior obtained)

Obtaining group member reports retrospectively

(Members rate and/or describe what went on in the group)

Using online human observers

(One or more observers record, code, or summarize group interaction)

Using mechanical or electronic recording systems(One or more cameras, tape recorders, or videocams record group interaction for later coding)

Inferring interaction from input–output relations

One strategy, of course, is to do without records of interaction – to measure or manipulate inputs (e.g., the initial decision preference of each group member), and measure outputs (e.g., the group’s final decision), and to build a set of theoretical inferences about what must have happened in between. These, of course, have no need for transforming/coding systems, or for methods of analysis of such coded data. Hence they will not be discussed within Parts II or III. Such systems can be more or less useful, depending on how thoroughly they are embedded within strong theoretical models that allow testing and falsification. Sometimes, for example, strong mathematical or computational models are used to connect input conditions to predicted outcomes, and then tested against empirically obtained outcomes. Such models implicitly assume that knowledge of interaction behaviors does not add appreciable information to that available in input–output relations. For a review of some mathematical and computational models of group decision making, see Stasser, Kerr, and Davis (1989).

Group member reports

A second strategy to obtain information about group interaction is to ask group members to report what went on in the group. Such member reports can be more or less detailed, more or less systematic as to coverage, and more or less directly quantified (e.g., in the form of rating scales). Member reports are almost always retrospective – reports after a meeting is over – although some researchers have asked participants to make judgments repeatedly while the group interaction is ongoing (e.g., Davis, Stasser, Spitzer, & Holt, 1976). For studies of continuing, extant groups, rather than of short-lived ad hoc groups, member reports are often reports about a substantial period of prior group life (e.g., the past week, or month, or year), rather than just about a single group “session.” In any case, use of recurrent member reports about group interaction runs the risk of serious reactiv-

ity – that is, that group members will be sensitized to (and potentially alter) those aspects of group interaction that were queried on earlier questionnaires. Using retrospective reports also runs the risk of incurring all the biases associated with the availability heuristic, such as weighting the earliest and the most recent interactions more than intermediate interactions.

Moreover, group members may not be able to respond meaningfully to questions or rating scales that deal in abstract concepts that are of interest to the researchers. At the same time, group members may be able to appreciate the “situated meaning” of group interaction, which might be quite different from the meanings that would be inferred by an “outside” observer. This is analogous to the “emic” versus “etic” issue in cross-cultural study. (See Poole, Folger, & Hewes, 1987, for a detailed and informative discussion of these issues, which they discuss in terms of “informant-based” vs. “formal” researcher-based analyses.)

Use of human observers

A third strategy for getting information about group interaction is to have one or more observers – people who are essentially members of the research team, rather than members of the group – watch and listen to group interaction as it takes place and make some record of what they observe. The record can be done either for all group actions, or for systematically selected samples of group interaction – either samples of time intervals, or selective coding of only certain kinds of events if and when they occur. The group may be aware of the presence and actions of such observers, or the observers may be hidden from or unknown to the group.

The most common form of this strategy requires observers to record their observations in highly coded form as interaction is happening. Hence, most of the transformation into systematic data (which is treated in Part II of this chapter) must be made “on line.” This approach raises a number of issues. It requires much prior training on the part of observers. It requires use of multiple observers, at least for any portions of the data on which reliability estimates are to be made. Having one or more observers present and known to be watching can be obtrusive for the group, and this may in turn alter ongoing group interaction. Using observers hidden from or unknown to the group often raises ethical issues (see discussion of overt vs. covert observation at the end of this section).

Another way to use the direct observation strategy is to have an observer try to record, in writing, the ongoing interaction. Such records can range all the way from simply noting certain acts if and when they occur (a limiting case of direct coding, as above), to an attempt to obtain a verbatim record of spoken behavior, as is done by court recorders (which is a limiting case of the fourth strategy, to be discussed below). The more the observer condenses or extracts information rather than simply providing a verbatim recording, the more he or she is doing the direct coding on line, even if the resulting information is in discursive rather than quantitative or categorical form. The more the observer tries for a verbatim record, the more the results are like those of the fourth strategy, mechanical or electronic recording.

Use of recording devices

The fourth general strategy for obtaining a record of information about group interaction is to make a permanent and comprehensive record of it, by mechanical, photographic, or electronic means. This permits the transformation into coded data to be done later, at times and under circumstances chosen by the researcher. As noted above, the record produced by a court recorder is an example. So, too, would be a shorthand transcript. Different technologies have been the method of choice for such recordings at different times in the past; for example, movie cameras or audiotape recordings. Nowadays, video cameras are a widely available, relatively cheap, and effective technology for recording group interaction.

Each of these technologies, however, imposes its own array of limitations on the results. Obviously, an audio recording gives up the possibility of including visual nonverbal behavior in the transformed data. It also can make it difficult to “unscramble” the source of different verbal contributions if the group has more than a very few members unless each member’s voice is recorded on a separate channel (see Jaffe & Feldstein, 1970). Movie cameras, especially those cheap and accessible enough to be used widely in group research in the past, often had relatively low-quality sound, hence trading off auditory for visual information. These matters are attenuated, if not entirely eliminated, by the use of video cameras. All such devices, of course, provide a record of group behavior from only one point of view, unless multiple recording devices are used. But that is also true for the use of a single human observer in the group. Yet, human observers can change their location and perspective if they wish.

This fourth strategy for obtaining information about group interaction – use of recording devices – offers a number of major advantages for the subsequent coding stage. First of all, it does not require an observer to be all seeing, and to make all coding judgments “on the fly.” With videotapes, for example, the coder can stop the tape, back it up, and view a given action sequence over again. It therefore allows the use of much more complex coding schemes, based on much more complex distinctions among categories. It also allows the researcher to construct between-coder reliability estimates based on as much data and as many coders as the researcher has resources and patience to include. It even permits within-coder reliability estimates, and it permits uncoupling of the fixed temporal sequence of a group’s activity (if that were desired) by having “segments” of interaction coded in random order.

Use of recording systems has some negative features, too, although most of them are no more serious for such devices than for online human observers. Equipment costs can be high; but over a large number of subject groups these are often less than costs of employing human observers. Methods using mechanical or electronic equipment are subject to equipment breakdowns; these, of course, are also possible, though probably less frequent, for strategies using online human observers. Use of a mechanical or electronic recording device imposes a single limited perspective for any given recording device; but that is true, to some degree, for records generated by any given human observer or any given group member. Use of mechanical or electronic devices entails a loss of whatever crucial aspects of group activity are not carried via auditory and visual channels but

would be picked up by a human observer. It may be the case, for example, that an online human observer can detect tension or cohesiveness that would not be detectable from a voice or video recording. It may also be the case that a human observer can to some degree make the kind of “insider” judgments that group members can make about the “situated meaning” of group activity, or can temper their responses in light of ongoing conditions (such as an extremely hot room). To our knowledge, however, such “quasi-emic” ability of online observers has not been demonstrated empirically. It may also be the case that group members are more reactive to the obtrusiveness of a video camera or audio recorder than they are to the obtrusiveness of an observer; but there certainly is no strong evidential base for that view.

In our judgment, the advantages of electronic recordings seem to far outweigh the disadvantages. It is always desirable to use multiple alternative methods when that is feasible. Such is the case here as well. But if a given study can make use of only a single method for obtaining a record of observation, it seems to us that the fourth approach (using mechanical or electronic devices, particularly videotaping) is the method of choice. In our discussion of the transformation of such records into data in Part II of this chapter, we will assume use of videotape recording as the default method for obtaining a record of the group’s interaction.

Covert versus overt observation

Use of either human observers or recording devices requires a choice as to whether the group members will be aware that the recording is being done. This choice has methodological, practical, and ethical implications. The methodological implications have to do with the potential reactivity effects of the observation process itself (see Webb, Campbell, Schwartz, Sechrest, & Grove, 1981). Data from a visible observer (or observation device) is subject to a number of potential biases arising from the participants’ awareness that their behavior is the subject of observation and/or recording. These include guinea pig and role selection effects (Webb et al., 1981).

The practical effects of this choice arise because it is relatively difficult to use human observers or recording devices covertly, for long periods of time, without knowledge or at least suspicion on the part of participants. If participants discover such a deception (or believe they have discovered a deception even when the research is not carrying on covert observation or recording), that discovery itself can have major consequences for the participants’ continued participation in the study.

The ethical issue, of course, has to do with the circumstances under which it is acceptable for researchers to deceive their participants. Researchers differ considerably in their views on that ethical question. Some, for example, distinguish between behavior that is being done in relatively public settings such as ball parks and public transportation (which they see as fair game for covert observation or recording), versus behavior in settings assumed to be relatively private, such as closed offices and private dwellings (which they regard as off limits for covert observation or recording). Unfortunately, most research settings, including virtually all laboratory experiments, fall somewhere in between those two clear-cut choices. So the researcher must make an ethical judgment for each study. The

choice regarding overt versus covert observation, therefore, is an important and difficult judgment call that the researcher should not make lightly. The American Psychological Association offers some ethical guidelines for this and other choices in the research process.

Part II: Transforming Records of Group Interaction into Data

When the researcher has obtained a record of group interaction, by whatever means and in whatever degree of detail, he or she then faces the task of transforming that record of information into data – systematic evidence about whatever (selected) aspects of group interaction the researcher wishes to examine. Data obtained from a record of behavior is *always* selective; it does not incorporate all possible aspects of the behavior to which it refers. Indeed, the record itself is already selective, as suggested in Part I of this chapter.

Unit act

The logical first task in developing a coding system is to specify what will be regarded as a unit of activity. For most systems, the unit is specified at a relatively micro level, defined in terms such as who the actor is, who the target is, what (substantive) kind of activity it is, and its temporal duration. The choice of any particular definition of unit act has implications, some favorable and some problematic, for the data that will result from its use.

One common definition of unit act, for example, is “a single uninterrupted utterance of a given group member.” That definition implies that: (a) acts by different members are to be treated as different acts; (b) the target of the act is not of consequence; (c) a single act may encompass two or more different kinds of content or substance; and (d) some period (of specified minimum length) during which that same actor is not speaking defines a meaningful end of an act, and the next verbalization will be considered a new act even if by the same actor. Hence, it implies that a member may follow himself or herself as a speaker. It also implies a potential multiple-categorization problem. An act may have to be multiple-coded into more than one category if the coding system entails categories based on substantive differences.

In Bales' classic interaction process analysis (IPA) system (Bales, 1950a, 1950b, 1953), a unit act was defined as an utterance by a member that fit one and only one category of the system. By that definition, an act would end if there was a new speaker, a new target, silence (of some specified minimum duration), or a shift in the content or nature of the act that would place it into a different category of the system. That definition solves the multiple-categorization problem, but raises three new problems. First, one can argue that some unit acts really do belong in two categories because they accomplish two different things (e.g., a comment connecting the previous idea to another one could be considered both an agreement and a modification or elaboration). Second, some comments may not

fit any meaningful category at all. It is often useful to include a “noncodable comment” category for such acts; some analysis methods require that the set of categories be exhaustive. Third, since a new act begins when a single verbalization shifts from one category to another, the definition of a unit act is confounded with the definition of the content categories. Unit acts cannot be defined without reference to the categories. Bales’ IPA definition of a unit act thus confounds the process of “parsing” verbal interaction into discrete units and coding those units into content categories. This affects assessments of reliability of both the unitizing of interaction and its category coding. If two raters disagree on whether ongoing action has shifted categories, they will end up with a different sequence of acts as well as with a different set of codings of some of those acts. Such a definition also generates very micro-level units, which in turn puts a heavy attentional and cognitive burden on the coder – especially since Bales’ system was intended for use online rather than via recordings or transcripts.

Content categories also can be used to distinguish between units of action at more macro levels. Gersick (1988), for example, working from transcripts of recordings, coded all group utterances into a number of major “themes” (see also Berg, 1967). This approach generates units of activity at a much more macro level; but it is usually used in ways that sacrifice distinctions regarding specific speakers as well as temporal duration, location, and sequence.

A system can make use of a temporal interval to define a unit of activity. Futoran, Kelly, and McGrath (1989), for example, working from video recordings, used a system that coded each second of interaction time with regard to whether or not there was (verbal) activity going on in that interval, and if so who the speaker was (including the possibility of more than one simultaneous speaker), whether the act had to do with task content, group process, or interpersonal activity, and various subtopics within each of those categories. Variants of that system were used by Karau and Kelly (1992) and by Lebie, Rhoades, and McGrath (1996). Coding with that system yields a temporally rich body of data, but it is enormously labor intensive even if working from recorded interaction.

As noted above, the definition of unit act that a system adopts plays a major role in shaping the nature and usefulness of the body of data that can be generated with that system. The definition of unit act sets a lower bound on how finegrained the body of data generated by that coding system can be. Only those distinctions that are built into the unit-act definition can be used as bases for comparisons. The set of possible coding distinctions will be the next topic of this section. Of course, a researcher can always make a body of data less finegrained by aggregating over one or more distinctions that were built into the coding system; this will be discussed later in this section, and then again in Part III in our consideration of techniques for analysis.

In the rest of this section, we will lay out a conceptual framework indicating important facets of group interaction coding systems. We intend the framework to encompass a comprehensive set of possibilities. We will refer to illustrative systems that exemplify various regions of the space defined by the framework, and discuss some of the possibilities, limitations, and methodological issues raised by differing alternative systems for group interaction coding.

The anatomy of group interaction coding systems

The fundamental parameters of group interaction coding systems are:

- *who* is involved in the action;
- *what* kind of action is it;
- *when* does the action occur;
- and to what degree (or *how much*) does the action occur (i.e., is the action coded merely as occurring or is it given some magnitude).

Each is multi-faceted. Together, these four parameters encompass the major distinctions on which different group interaction coding systems vary, and the major distinctions about which group interaction coding systems can yield information. They are listed in Table 22.2.

Who? The *who* parameter of a unit act almost always refers to the individual group member who is speaking or acting. In principle, though, there is no reason why unit acts could not be defined in terms of joint actions of two or more people (e.g., member A and B jointly doing some task). This is particularly appropriate for coding systems that incorporate motor activity beyond verbal utterances. Sometimes group interaction data is also specified in terms of the target of each act (that is, *to whom*). This can be a useful distinction, and it is a necessary one for some analysis methods (e.g., see discussion of social network analysis in Part III). But it is often the case that acts in a group are not targeted to a single other group member, but rather to the group as a whole. Hence, many coding systems ignore target. Few interaction coding systems ignore which group member(s) is acting (category A in Table 22.2).

Although most group interaction studies have concentrated on verbal activity, some coding systems incorporate behavior in addition to verbal utterances. Tschan (1995) remarks that explicit verbal communication is less essential to group performance than is “coordinated information processing,” whether it be verbal or nonverbal (p. 373). For example, when two members realize that there is only enough room for one, one member may silently yield to the other, a behavior that would not be captured with a purely verbal coding system.

What? The *what* parameter of a unit act refers to the set of substantive distinctions that are to be made between different kinds of acts. This is the feature by which differences between coding systems are most apparent to the user. In general, systems that have been used to study group interaction have had one or another of three bases. Futoran, Kelly, & McGrath (1989) call them activity-focused, process-focused, and setting-focused, and we will adopt that terminology.

- 1 *Activity-focused systems* code the presence or absence of a particular class of behaviors whose criteria are defined by the researcher a priori. Most activity-focused systems involve verbal activity (i.e., “vocalization” or “participation”), in which the

Table 22.2. Four Parameters of Group Interaction Coding Systems

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1. **WHO?** What distinctions are made about the source of the activity?
 - A. *Group only*: no information about individual actors.
 - B. *Actor*: individual actor is identified
 - C. *Source–Target*: individual actor and target are identified.
 - D. *Joint activity*: multiple members involved in joint activity.

 2. **WHAT?** What distinctions are made about the nature of the activity?
 - E. *Activity only*: any activity within specified modalities.
 - F. *Process categories*: differentiate acts in terms of their role in process.
 - G. *Content categories*: differentiate acts in terms of their content.
 - H. *Process/content*: acts differentiated on both process and content.

 3. **WHEN?** What distinctions are made about temporal features of the activity?
 - I. *Static*: no temporal information.
 - J. *Phase location*: location of act with regard to two or more phases.
 - K. *Act sequence*: location of act with regard to sequence of acts.
 - L. *Time sequence*: location of act in real time.

 4. **HOW MUCH?** What distinctions are made about the magnitude of the activity?
 - M. *Categorical*: information about presence/absence only.
 - N. *Intensity/Amplitude*: quantitative information about intensity of an action.
 - O. *Quality*: quantitative information about quality or effectiveness of an action.
 - P. *Duration*: quantitative information about temporal extension of an action.
-

criteria are typically volume (loud enough to be heard by other members) and communicative content (which excludes sneezes, coughs, etc.), but in principle any particular class of behaviors could be examined. Activity-focused systems make no substantive distinctions at all between different kinds of actions, but merely between activity and inactivity with regard to particular kinds of behavior. Several such systems have been designed and used to study the patterning of member participation or verbal activity (e.g., Chapple, 1942; Chapple & Donald, 1946; Dabbs & Ruback, 1987; Dabbs, Ruback, & Evans, 1984; Jaffe & Feldstein, 1970; Warner, 1979, 1988). For a review of research on verbal participation, see Bonito and Hollingshead (1997).

- 2 The most well-known group interaction analysis system – Bales' IPA (1950a, 1950b) – is a *process-focused system*. That is, it defines the substance of acts in terms of what kind of contribution the act makes to the group's task performance, group functioning, and interpersonal relationships. Bales' 12 IPA categories consist of act types such as "asks for information," "gives information," "asks for opinion," "gives opinion," "agrees," "disagrees," "expresses hostility," "expresses solidarity," and so on. These categories have to do both with the process by which the group carries out its task ("gives information" vs. "gives opinion"), and with the process by which the group's members relate to one another (e.g., "expresses solidarity" vs. "shows

ension”) – that is, with “task process” and “interpersonal process.” Thus, such process systems may encompass the group’s task performance processes as well as its intragroup “maintenance” or interpersonal relations processes.

What such systems do not encompass is the specific *content* of acts. For example, Bales’ IPA does not code what specific information was given, or what opinions were expressed, or what was agreed upon. The intent of such process-focused systems is to provide categories that transcend whatever specific tasks or activities a given group may be engaged in, and therefore to be useful across groups of various kinds.

Bales’ IPA and variations of it have had many applications. For example, Bales (1953); Bales & Borgatta (1953); Bales & Slater (1953); Bales & Strodtbeck (1951); Borgatta (1962); Dunphy (1968); Landsberger (1965); Morris (1966); Psathus (1960); Slater (1955). Bales’ later revision of both the theory and the coding system, SYMLOG, continues to have many users (Bales, Cohen, & Williamson, 1979; Polley, Hare, & Stone, 1988). Contemporaneous with Bales’ IPA, researchers inspired by Bion’s (1960) theory of work and emotionality built process-focused interaction analysis systems based on that work (e.g., Stock & Thelen, 1958; Thelen, 1954). Bion’s theory continues to influence group interaction analyses (e.g., Verdi & Wheelan, 1992; Wheelan & McKeage, 1993).

- 3 Group interaction analysis systems of the third type, *setting-focused*, are designed around particular types of groups and/or particular types of tasks. This is often done in studies of work groups in natural settings performing complex team tasks (e.g., military training situations). These are exemplified for military teams and industrial work groups in the early work by Carter and colleagues (e.g., Carter, Haythorn, Meirowitz, & Lanzetta, 1951; Lanzetta & Roby, 1960); work by Hollenbeck, Ilgen, and colleagues (e.g., Ilgen, Major, Hollenbeck, & Sago, 1995); work by Salas and colleagues (e.g., McIntyre & Salas, 1995; Salas, Dickinson, Converse, & Tannenbaum, 1992); and work by Foushee and colleagues on airline flight crews (e.g., Foushee, 1984; Kanki & Foushee, 1989). Setting-focused systems are also exemplified in decision-making groups by Hirokawa and colleagues’ functional model of decision making in groups (e.g., Gouran & Hirokawa, 1986; Hirokawa, 1980, 1985, 1988); by Poole and colleagues’ work with their sequential decision-making model (e.g., Poole, 1981, 1983a, 1983b; Poole & Roth, 1989a, 1989b); and by systems that Kiesler and colleagues have used with computer-mediated decision-making groups (e.g., Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Weisband, 1992).

The *what* parameter for such setting-focused group interaction is structured in terms of the specific task content of actions. These might include such acts as: “puts brace into place and fastens,” “closes and secures cabin door,” “fires automatic weapon in direction of enemy movement,” “dribbles to free throw circle and takes a jump shot,” “chips onto the green with a 9 iron,” or “corrects typographical errors in proposed statement.”

Another way to deal with the *what* parameter within setting-focused systems is to code selectively, only for acts of particular types. For example, both Stasser and Titus (1985, 1987) and Hollingshead (1996), studying the effects of distributed information in groups, coded interaction transcripts only for initial and repeat

mentions of specific items of task information that had initially been distributed according to experimental plan – some items being given only to one member and some to all members. Similarly, in one set of analyses Gersick (1988) coded only for references to time.

As is evident from these examples, such systems are content specific. Each system is applicable only to groups working within certain kinds of settings and working on certain kinds of projects. This very specificity is both the main strength and the main limitation of setting-focused systems. It is a strength because it allows the researcher to examine micro-level features of the group's task performance behavior and relate them both to input factors and to features of the group's task product. It is a weakness because the results obtained from any one system are limited in their applicability to groups in the same relatively narrow domain.

The opposite is the case, of course, for process-focused systems. The nonspecificity of their substantive categories makes them broadly applicable to groups of many kinds, but at the same time precludes their use in examining micro-level features of the group's task performance processes. Activity-focused systems, of course, have a related strength and weakness: they are very general, but they yield no information about the substantive nature of the group's activity, only about the who and when of a particular kind of activity.

Acts also vary in terms of the modalities through which they are expressed. By far the majority of studies of group interaction have been concerned with communication among members, especially verbal communication (text or speech depending on the recording system). Mostly, the concern has been with the semantic aspects of speech. Some systems include some syntactic features of speech. Some include paralinguistic aspects of speech (e.g., tone, intensity, inflection, pace). Some include nonverbal aspects of communication behavior (body position, etc.). A few systems include physical behavior that is directed at external objects, such as are involved in the accomplishment of motor tasks (e.g., Murnighan & Conlen, 1991; Tschann, 1995; Ulick & Weber, 1996).

Which of these modalities can be included in a coding system depends on the record of behavior that is made in step one. A record in the form of printed text (a transcription, for example) permits coding only of semantic and syntactic aspects of speech. An audio recording permits coding of paralinguistic aspects. Coding of nonverbal communication, and of physical task-related behavior, requires a visual record.

When? Coding of the *when* parameter refers to several potential temporal features of activity. One is the act's temporal location within the overall record of group interaction. That temporal location can be specified either in terms of clock and calendar time (e.g., 2:16:35 p.m., Wed., March 9th, 1998) or in terms of a temporal location within the group's time (e.g., "at the beginning of the group's third meeting"). Another temporal consideration is the act's location with respect to other acts – its location in a sequence of acts. This is sometimes very important, because the meaning of an act depends partly on what has gone before, and the effect of an act is to be judged partly on the basis of what kind of events ensue from it (e.g., Shelly, 1997). Still another temporal feature of

an act is its duration. Here, we treat duration as an aspect of the “how much” parameter (see discussion below).

How much? At the unit act level, there is also potentially a *how much* parameter. This refers to whether the group interaction process record contains information that provides a basis for judgments about the degree or magnitude of behavior in addition to its presence or absence. So, for example, instead of simply coding the occurrence of an act (member A hits member B), some records of group interaction might permit the coding of different intensities of that behavior (A hits B moderately hard). Such judgments of *how much* (amount or magnitude) can be made along at least three continua:

- (a) *Intensity*: The record of behavior may directly express (or a coder may be able to infer from it) *how much* of a given property a certain unit act exhibited – that is, its *intensity* (e.g., “how *hard* did child A hit child B?”).
- (b) *Quality*: The record may express (or permit an inference about) *how well* the behavior was carried out or how effective its results were, with reference to some standard – that is, its *quality or effectiveness* (e.g., “on a scale from 1 to 6, how good was that diver’s performance?”).
- (c) *Duration*: The record may express (or permit an inference about) *how long* the unit act extended in time – that is, its *duration* (e.g., “for how many seconds did member A hold the floor?”).

Each of those kinds of quantification presents different possibilities and limitations for analysis, as do categorical data.

Categorization, quantification, and aggregation

If the coding system makes judgments of “how much” (types N, O, or P in Table 22.2), those data can be treated directly as quantitative information – usually as if it were interval or ratio scale data. It can then be analyzed by any of a range of standard parametric statistical methods (*t* test, ANOVA, regression, etc.).

The vast majority of group interaction coding systems, however, generate categorical data (type M in Table 22.2). It is possible to treat each such categorized act separately, as a unit of action for qualitative analysis. But doing so is cumbersome, and puts major constraints on the amount and generalizability of the information such procedures can yield. More often, researchers transform the categorical data into forms amenable to statistical analysis by aggregating acts over some facet(s) of the coding system so as to yield absolute or relative frequencies. For example, aggregating each member’s speaking turns over the entire group session can yield relative frequencies that indicate the proportion of total speaking turns by each member. These frequencies could then be used to examine the degree to which participation in the group is centralized within a few members or is evenly distributed among all members (a technique covered in Part III). Frequency data permit the use of a number of statistical techniques (e.g., Chi-square and loglinear analysis). Furthermore, if the duration of acts is known, frequency data can be transformed into

magnitude (interval scale) data (see Gottman, 1979), hence suitable for use with those parametric statistical methods requiring interval-scale data.

Aggregation of data over some of the distinctions made in the coding system, however, has both desirable and undesirable consequences. On the one hand, as indicated above, aggregation over some facets is virtually necessary to generate a database on which quantitative analyses can be performed, and it can make it possible to use more powerful analysis methods and thus yield more definitive comparisons. At the same time, aggregation over any distinctions within the coding system entails a loss of information – just as if that distinction had not been retained during the recording and coding steps. If the aggregation is over all of the distinctions of a given parameter (e.g., if all speakers are lumped together on the *who* parameter), that eliminates that parameter as a meaningful feature of the coding system. So if acts are aggregated over the whole time interval (type I in Table 22.2), that gives up all information about act sequences and about the temporal location of acts. If acts are aggregated over all members (type A in Table 22.2), that gives up information about the distribution of participation among members. If acts are aggregated over all types of acts identified in the coding system (type E in Table 22.2), that gives up information about the distribution of group interaction among different kinds of activity. If acts are aggregated over all three of these axes at the same time – that is, over *who*, *what*, and *when* (types A, E, I in Table 22.2) – then virtually no analyses can be carried out.

It is possible, though, to aggregate acts over some but not all distinctions within a parameter. For example, the *who* parameter can be used for such “partial aggregation” by aggregating acts by sex (aggregating all acts performed by female members and all acts performed by male members), by officers versus enlisted soldiers, by members who had different pre-meeting preferences or judgments (e.g., guilty vs. not guilty), or by any other feature that allows members to be categorized into subgroups.

Partial aggregation on the basis of the *what* parameter is an even more common practice. What this amounts to is reducing the specificity of the coding categories of the system. An example would be combining all three of the “question” categories of the Bales’ IPA system, and comparing them with the aggregate of all three of the “gives” categories. Bales and colleagues made use of such aggregation when they did analyses in terms of the four macro categories of the IPA system (3 asks vs. 3 gives categories of task acts and 3 positive vs. 3 negative categories of socio-emotional acts) (Bales & Slater, 1953; Bales & Strodtbeck, 1951).

The *what* parameter also can be used to define a unit of aggregation at a more macro level. For example, as noted earlier, Gersick (1988) coded all acts in terms of certain common themes related to the group’s project. Most but not all acts related to a given theme occur in close temporal proximity. Thus, theme coding divides the total interaction record into intermediate units that are not entirely chronological.

Partial aggregation on the basis of the *when* parameter is also relatively frequent. Many researchers have divided up a total group record into a small number of “phases,” usually of arbitrary but equal length and in chronological sequence. Bales and colleagues divided group sessions into thirds in their classic analysis of group problem-solving phases (Bales & Strodtbeck, 1951; see also Landsberger, 1955; Psathus, 1960). Sometimes researchers can take advantage of more natural time periods. For example, in a recent study of groups

that worked two hours each week for seven weeks, Lebie, Rhoades, and McGrath (1996) used each week's session as a phase for aggregation of acts.

Off-the-shelf versus custom-designed systems

One issue always faced by researchers contemplating the observation and analysis of group interaction data is: "Should I select an existing coding system, or should I design my own coding system for this study?" Both choices have positive and negative features. There is always the strong temptation, on cost and time grounds if nothing else, to select and use an existing coding system. To the extent that you can locate a coding system that has been used successfully for research questions appropriately similar to your own, and to the extent that your groups, tasks, and operating conditions are similar to those for which that system has been used, adoption of an existing coding system has several important advantages. First, results that you obtain with it can often be directly compared to results from other studies in which that coding system was used. Second, previous users have probably gotten many of the "bugs" out of it, and may have developed (and published) techniques for training observers and coders in its use. There may be drawbacks to the adoption of even well-developed systems, however. Most studies involve at least some features or conditions that were not in earlier studies, so the fit of an "off-the-shelf" system will be imperfect at best. Moreover, most coding systems contain an implicit theoretical stance, so if you adopt a coding system you are embedding that theoretical position in your study as well.

To the extent that you are working from a different theoretical perspective than researchers who have developed earlier coding systems, and to the extent that you are examining different questions and/or studying different operating conditions, you may be well served by developing your own coding system. Particularly to the extent that you want to apply the system to micro-level features of the interaction of certain sets of groups that you plan to study, you may need to include coding categories, unitizing rules, and recording methods that suit your unique purpose and study plans. At the same time, results obtained from your customized system may have a much narrower span of generalizability than results from a widely used system.

Of course, all coding systems were at one time "new" and "customized." If it is your intent to develop an extensive program of research using group interaction data, it may be advantageous to develop a coding system that generates data that is tightly tied to the theoretical perspective underlying your research program. That requires a sizable early investment, but it can pay off by providing you with a proven and well-fitting "off-the-shelf" system that you can adopt in later studies of your program.

Part III: Techniques for Analysis of Group Interaction Data

This section describes the uses and limitations of several techniques for the analysis of data about small group interaction. Many of these techniques do not require an exten-

sive background in mathematics, and a foundation for understanding them can be developed with little difficulty. Throughout this section we have given special attention to citing resources that are appropriate for those just beginning to explore these methods and that do a good job in introducing the fundamental concepts.

The techniques we review here can be organized according to their data requirements, which can be understood by asking to what degree the data can answer four questions: *who* are the interactants; *what* behavior occurred; *when* did that behavior occur; and *how much* (or to what magnitude) did that behavior occur. These questions are implied in the categories of coding systems shown in Table 22.2.

Whereas coding systems are especially differentiated in terms of the *who* and *what* parameters, analysis techniques are especially sensitive to the *when* and *how much* parameters. The first fundamental distinction for analysis techniques concerns the *when* question. This question asks for the degree of temporal information contained in the data (see Table 22.2, types I–L). For example, sequential analysis and time-series analysis (discussed below) can only be used if the data contain some information regarding the order of behavior (types J, K, L data in Table 22.2). Data that do not possess any temporal information (type I data in Table 22.2) are more appropriate for either loglinear or general linear modeling, depending on whether they can answer *how much*.

The second important distinction for analysis techniques is *how much*, or whether the data contain a measure of a behavior's magnitude. In most coding systems, a particular behavior is recorded only with regard to its presence or absence, not its magnitude. For example, a coding system might specify that an act was aggressive, but not what degree of aggression it exhibited. As a result, most of the data from studies of small group interaction are nominal-scale, or categorical data. Methods appropriate for analysis of categorical data include loglinear, logit, and sequential analysis, while the methods best suited for analysis of data containing magnitude information are linear models, multi-level models, and time-series analysis.

Regarding the *who* and *what* parameters: Although these two questions are enormously different from a substantive point of view, for the analysis of categorical data these *who* and *what* questions are somewhat interchangeable. That is, many techniques can be used if distinctions are made either among sources (types B, C, or D in Table 22.2), among types of act (types F, G, or H in Table 22.2), or both. Categorical data encode both actors and behaviors as a set of nominal categories, and these nominal categories are just as easily manipulated if they represent actors as if they represent behaviors. For example, the sequential analysis of categorical data can just as easily examine sequences of actors (e.g., transitions from member B to member D), sequences of behaviors (e.g., transitions from behavior X to behavior Y), or sequences involving actor–behavior combinations. One exception to the interchangeability of the *who* and *what* questions for categorical data is social network analysis (Wasserman & Faust, 1994). In most current formulations, that technique requires specification of both source and target of the activity or behavior, whether or not different types of acts are identified (Wasserman & Faust, 1994; Wasserman & Pattison, 1996).

Combining the key distinctions of the *how much* and the *when* parameters yields four basic categories of data, each of which is most appropriate for a particular set of analysis techniques (see Table 22.3). We first consider analysis techniques appropriate for data

Table 22.3. Four Sets of Techniques for Quantitative Analysis of Group Interaction Data

 STATIC ANALYSIS

For categorical data (frequencies and proportions)

- Chi-square
- Centralization indices
- Loglinear and logit models
- Social network analysis

For data expressing magnitude (differences and covariation)

- Regression, t , ANOVA [these techniques not discussed in this chapter]
- Multi-level models

ANALYSIS OF RELATIONS OVER TIME

For categorical data

- Loglinear and logit models
- Lag-sequential analysis
- Dominance indices
- Markov models

For data expressing magnitude

- Repeated measures analysis
 - Trend analysis
 - Time-domain analysis
 - Frequency-domain analysis
 - Tuckerized growth curves
-

that are static and categorical (types I and M in Table 22.2), including Chi-square, log-linear, and social network analysis. Many of the data analysis techniques appropriate for static data that express magnitude – linear models, t tests, ANOVA – are familiar to group researchers and are therefore not discussed in this chapter. Multi-level models, which are less well known and offer many advantages to group researchers, will be discussed in the section on static magnitude data. Then we consider data analysis techniques appropriate for studying relations over time. These include methods for the analysis of repeated measures, for the detection of serial dependence (lag-sequential analysis, dominance analysis, Markov models), and for the analysis of time series (time-domain analysis, frequency-domain analysis, and Tuckerized growth curves).

Analysis of static categorical data

When categorical data are aggregated and tallied as frequencies, the appropriate questions to be asked have to do with whether the obtained frequencies are disproportionately distributed among actors or act types. Chi-square analysis can be used to assess the degree to which frequencies are disproportionately distributed, whereas loglinear models allow

more sophisticated tests of the effects of specific factors and interactions. For example, loglinear analysis could test whether the frequency of interpersonal comments varied systematically as a function of member sex, of task type, or of an interaction between these two factors, whereas a Chi-square test would merely indicate the degree to which interpersonal comments were distributed inequitably among these categories.

When data are expressed as proportions or are binary, logit (also called logistic) models are more appropriate. For example, a logit model would be appropriate if a dependent variable indicated whether or not an actor expressed agreement (binary) or the proportion of times the actor expressed agreement (proportion), whereas a loglinear model would be appropriate if a dependent variable indicated how often the actor expressed agreement (frequency). For an introduction to categorical data analysis, see Agresti (1996).

Sometimes the researcher wishes to ask more specific questions about the distribution of frequencies, such as the degree of centralization of that distribution. This question is appropriate, for example, regarding the degree to which participation in certain sizes or types of groups is centralized so that one or a few members dominate it disproportionately. The Gini coefficient (Weisband, Schneider, & Connolly, 1995), borrowed from economics, is often used to ask such centralization questions. This statistic ranges from 0 (no centralization; all members contribute equally) to 1 (complete centralization; participation monopolized by a single speaker). See Berdahl and Craig (1996) for an example of an analysis of centralization of participation in relation to the sex composition of groups.

Social network analysis (Wasserman & Faust, 1994) is a method for studying the social relations within a closed group of actors. In social network analysis, a square matrix is constructed with actors defining the rows and columns and some social relation (e.g., knows, is related to, likes, hits, talks to, etc.) defining the elements. This matrix can represent both directional (e.g., hits) and nondirectional (e.g., is related to) relations between pairs of actors, and Wasserman and Pattison (1996) present models for the analysis of each. In either case, however, the relation exists between the members of a dyad, limiting its application to cases where dyadic interaction can be assumed. Because communication in small groups is often addressed to the group as a whole rather than to a single member, the dyadic representation makes social network models inappropriate for the analysis of much small-group activity. With the appropriate data, however, social network analysis can be a powerful tool. It has been developed to allow the analysis of multiple relations (Fienberg, Meyer, & Wasserman, 1985), differences among subgroups (Wasserman & Iacobucci, 1988), and changes across a small number (typically fewer than five) of time periods (Wasserman & Iacobucci, 1988). For an introduction to social network analysis, see Wasserman and Faust (1994).

Analysis of static magnitude data: Multilevel models

Multilevel models are designed to be used for data that has a hierarchical structure. Data from group members has a hierarchical structure: Members are nested within groups. This hierarchical structure has two important consequences. First, the assumption of independent observations is violated because data collected from a member of one group is

more similar to data collected from other members of that group than to data collected from a member of another group. Second, with hierarchical data it is possible to ask about the effects of variables that exist at different levels. For example, it may be interesting to model the performance of group members based on individual-level variables, such as motivation, and also group-level variables, such as group size or group norms. Multilevel models, also known as hierarchical linear models, account for the dependency within groups and allow for the simultaneous fitting of individual- and group-level effects. For a thorough introduction to multilevel models, see Bryk and Raudenbush (1992). Kreft and DeLeeuw (1998) offer details on the application of multilevel models in several popular statistical software packages.

Analysis of relations over time: Categorical data

Two approaches are available for the analysis of categorical data over time, depending on whether the data are aggregated into phases (type J in Table 22.2) or whether the information regarding the exact sequence of events is available (types K and L in Table 22.2).

If the interaction has been split into two or more intervals (type J data in Table 22.2), then the category data within each interval can be aggregated either in terms of the frequency of each category or the proportion of each category relative to some total. As mentioned above, frequencies can be analyzed using loglinear models and proportions can be analyzed using logit models. In this case, the models are used to determine whether the intervals are significantly different from one another with regard to the distribution of categories. More powerful tests are possible when a linear trend over time is suspected (see Agresti, 1996).

If the categorical data contain information regarding their ordering, then the data can be analyzed for the presence of serial dependence. Serial dependence is the condition in which a behavior is to some degree dependent on the occurrence of some behavior that preceded it – either immediately prior to it or at some specific interval in the past. The “intervals” defining those sequences can be expressed either in units of time (e.g., each second as a unit) or acts (e.g., each coded act as a unit). We will discuss two variations of such analysis: lag sequential analysis (and its application to interpersonal “dominance”) and Markov models. For an introduction to sequential analysis, see Gottman and Roy (1990).

Lag-sequential analysis. The fundamental objective of lag-sequential analysis is to find out if one event consistently follows another event at some fixed interval or time “lag.” In the case of participation data, for example, that could be a question of whether a certain member, A, speaks significantly more often immediately after (i.e., at “lag 1”) a certain other member, B, has spoken, compared to member A’s own base rate of participation. Or it could be used to ask whether a particular type of act (e.g., a task suggestion) is more or less likely to occur if a particular other type of act (e.g., an interpersonal agreement) occurred at some specific time in the past. Lag-sequential analysis consists of comparing conditional to unconditional probabilities. It begins by identifying a criterion event, X , at time t , and a target event, Y , at time $t + k$ (k units in the future), and then calculates

the conditional probability of Y occurring at $t + k$ given that X occurred at time t , $P(Y_{t+k}|X)$. It then compares this probability to the unconditional probability of Y occurring regardless of X , $P(Y)$. If the conditional probability is significantly different from the unconditional probability, then Y is dependent upon X . This dependence can take the form of the criterion event suppressing or eliciting the target event, depending on whether the conditional probability is less than or greater than the unconditional probability. These models can be used to identify dependencies of one member on another, of one category of act on another, or of a particular type of act by a particular member on a particular type of act by another member (e.g., a task act by A given an instruction by B). They also can be used to identify cycles of activity by lagging a particular member or behavior against itself. So, if the conditional probability of an act by member A at time $t + 4$ given an act by A at time t is significantly higher than the probability of an act by A overall, then A 's behavior exhibits a four-unit cycle. Faraone and Dorfman (1987) provide a statistic for measuring the serial dependence between actors that accounts for autodependence and is easily calculated from cross-correlations and autocorrelations.

Dominance. Gottman (1979a) proposed a definition of interpersonal dominance based on an asymmetry in the conditional probabilities of two members: "that is, if B 's behavior is more predictable from A 's past than conversely, A is said to be dominant" (Gottman & Ringland, 1981, p. 395). Using time-series methods (see discussion of frequency-domain analysis, below), Gottman (1979a) developed a statistical test for dominance that averages across a range of time lags. Critics have pointed out that Gottman's initial test of dominance fails to compensate for autodependence (Allison & Liker, 1982) and for the dependency in the conditional probabilities (Wampold, 1984). However, a number of alternative approaches to testing for dominance have been developed and applied (Allison & Liker, 1982; Budescu, 1984; Dillon, Madden, & Kumar, 1983; Faraone & Dorfman, 1987; Wampold, 1984), suggesting that it is a valuable relation to investigate.

Markov models. Markov models (Gottman & Roy, 1990) are another class of methods for analyzing serial dependence. Whereas lag-sequential methods ignore whatever might have gone on within the lag period, Markov models specify the entire sequence of acts/events between target and criterion. Markov models are used to identify sequences of acts that occur significantly more often than would be expected given the base rates of each of the acts. In the social sciences, Markov models seldom consider sequences greater than two or three units in length (i.e., first- or second-order models).

Two assumptions required by Markov models make them problematic for much social science data, including interaction data. The first of these is stationarity, which assumes that the probability of a particular sequence will remain the same throughout the entire period of interaction. If there is change over time in the relations between acts or members, then that assumption is violated. The stationarity assumption can be tested within a body of data by dividing up the data into two or more periods and comparing the probability of sequences between periods.

The second assumption is path independence, which assumes that only the previous act (or the previous two acts, for a three-act sequence) affects the target act, and that earlier events are irrelevant to the target act. For a system whose behavior is a function

of its own initial conditions and history (as groups surely are), the path-independence assumption is likely to be in error. Path independence is a more difficult assumption to verify; it essentially requires testing whether higher-order (longer length) Markov models provide a better approximation to the data.

Analysis of relations over time for data expressing magnitude

There are four basic approaches to the analysis of magnitude data over time: repeated-measures analysis, analysis of linear or polynomial trends (which we will call *trend analysis*); analysis of causal variables (*time-domain analysis*, of which Box and Jenkins' 1976 ARIMA model is the best known); and analysis of periodic trends (harmonic or *frequency-domain analysis*) (McCleary & Hay, 1980; Pole, West, & Harrison, 1994). Time domain and frequency domain refer to the manner in which time is represented on the x -axis. Time-domain analysis represents time as it is typically conceived – in time units. Frequency-domain analysis represents time in terms of frequency, either in Hertz or in fractions of the entire time interval.

Repeated-measures analysis. As with categorical data, magnitude data can be split into two or more intervals (i.e., type J data in Table 22.2), and examined with regard to whether the intervals differ significantly from one another. Repeated-measures analysis of variance can be used to examine whether group means vary significantly across intervals (e.g., whether group morale varies significantly over time). Multilevel models applied to repeated measures of individuals are often termed growth-curve models, and these models can be extended to accommodate data that is both collected over several periods of time and nested within groups (Singer, 1998). The advantage of multilevel models is the potential use of individual- as well as group-level variables.

Trend analysis. A special case of repeated-measures analysis concerns testing for the presence of a linear or polynomial trend across time intervals. If the points on the time axis are assumed to be equally spaced, then linear and polynomial trends can be tested using regression techniques (see Neter, Wasserman, & Kutner, 1990) or multilevel models. Note that multilevel models, repeated measures ANOVA, and trend analysis all require dependent variables that are normally distributed.

Time-domain analysis. Time-series analysis in the time domain consists of a class of models that assume that the next value of a time series is a function of previous values of the time series as well as previous values of time series of other variables. This is in contrast to trend analysis and frequency-domain analysis, which assume that a time series is some function of time. The most well-known approach to time-domain analysis is Box and Jenkins' (1976) Autoregressive Integrated Moving Average (ARIMA) model. This model attempts to estimate a time series Y_t (e.g., group performance) based on previous values of that series (e.g., prior performance, represented by Y_{t-1} , Y_{t-2} , etc.) as well as from previous values of one or more time series that are suspected of influencing Y_t (e.g., centralization of participation, morale, etc.). Because of its use of linear-regression tech-

niques in estimating time series, this approach to time-series analysis is often called the “regression” approach. It is especially useful when the movement of Y_t over time is the result of random “drift” rather than trend, as Box and Jenkins (1976) illustrated with their example of closing prices of IBM common stock (p. 300). Time-domain models could be used to examine the degree to which variables such as performance are dependent upon prior performance and on the distribution of participation within a group. For an introduction to ARIMA models in the social sciences, see McCleary and Hay (1980).

Frequency-domain analysis. Frequency-domain analysis is the search for periodic trends in data, that is, the search for cyclical behavior. It is the preferred method of examining periodic or rhythmic processes. While a time series that contains only one pure sine wave is easily identified as cyclical in the time domain, time series that are the sum of multiple sine waves of different periodicities appear unintelligible until they are decomposed into their component frequencies in the frequency domain (see Porges, Bohrer, Cheung, Drasgow, McCabe, & Keren, 1980, for an illustration). The process of decomposing a time series into its component frequencies is called spectral analysis, and is similar to a prism’s decomposition of white light into the spectrum of its component frequencies. Spectral analysis produces a measure called spectral density, which is the variance in the time series that can be accounted for by fitting a cycle with a specific frequency. Plotting the spectral density over a range of frequencies produces the periodogram, which is typically smoothed to reduce spurious peaks. This smoothed function is called the spectrum, and peaks in the spectrum indicate the presence of regular cycles of activity at particular frequencies.

Gottman (1979a, 1979b; Gottman & Ringland, 1981) developed a measure of dominance based on spectral analysis. Gottman (1979b) used this measure to investigate marital relations and found that couples who were satisfied with their relationship tended to have egalitarian dominance patterns (mutual interdependence) whereas husbands were more dominant than wives in couples who sought marriage counseling. All time-series methods are designed for use with magnitude data, but techniques have been proposed by which sequential categorical data can be converted into sequential magnitude data (Gottman, 1979a), and by which binary data can be analyzed using standard time-series methods (Kedem, 1980). For an excellent introduction to time-series analysis for the social sciences, see Gottman (1981).

Tuckerized growth-curve analysis. Before closing the section on time-series analysis, it is worth mentioning one more approach that is useful when studying multiple time series that are not well behaved (i.e., that are nonlinear, not fit well by polynomial models, and aperiodic). It is a descriptive approach called Tuckerized growth-curve analysis (Brossart, Patton, & Wood, 1998; Tucker, 1966). In this approach, multiple time series are compared with one another to determine whether they can be approximated using only a few time series. A factor analytic heritage is strongly evident in this approach. Individual time series are collapsed into a number of time series determined either a priori by the researcher or empirically through indices of fit. While this approach does not test for the presence of various trends or rhythms, it is a useful first step in data reduction.

Concluding comments about methods for analysis of interaction data

The review of analysis methods in this section is intended to introduce group researchers to some of the techniques available for analyzing interaction data. Which methods will be appropriate for a given study are determined in large part by the choices made at earlier stages of the research process. It is important to consider the implications of these choices early on, so that the questions posed at the outset of a study can be answered at its conclusion. The interrelations among the three stages laid out at the beginning of this chapter – recording, coding, and analysis – are emphasized again in the final section in the form of some guiding rules.

Concluding Comments: Six Rules for Making Some Strategic Choices

Researchers intending to carry out observation and analysis of group interaction are undertaking a difficult, though potentially very rewarding, project. As we have tried to indicate in this chapter, they face a series of complicated and consequential choices, and each path they might follow has both advantages and problems.

Over and above all the specific methodological choices that we have tried to point to earlier in this chapter, there is a number of what might be called strategic choices that also need to be made. In this section, we will treat some of those strategic choices briefly by stating a series of quasi-rules that might guide researchers when they are contemplating, planning, and executing a project entailing the observation and analysis of group interaction. Those rules are not so much prescriptions for what to do as they are reminders for what to think about. Some of the rules are pretty obvious, but may be worth restating lest they be overlooked. Some of the rules are partially contradictory of one another. We display that semi-contradictory nature by juxtaposition in Table 22.4. Thus, we are offering advice that is more equivocal than prescriptive. What any given researcher *should* do regarding these matters (including whether or not to study group interaction at all) depends on his or her purposes and resources. Our purpose here is to help make those choices as fully informed as possible.

At the outset

As a research enterprise, observation and analysis of group interaction is a two-edged sword. On the one hand, properly planned and executed, it can yield rich empirical evidence about multiple facets of groups and their activities, and thereby aid our understanding of group phenomena immensely. On the other hand, carrying out that enterprise can be very costly with regard to both time and resources, and if not well thought out in advance, can result in a closet full of videotapes/transcripts but no useful research information. It is the relatively frequent occurrence of the latter case – costly though poorly

Table 22.4. Some Partially Conflicting Rules for Undertaking Observation and Analysis of Group Interaction

#1	PLAN IN ADVANCE	but	#6	BE FLEXIBLE
#2	FOCUS THE STUDY	but	#3	CAST YOUR DATA NET WIDELY
#4	BUILD FROM THEORY	but	#5	PAY ATTENTION TO YOUR DATA

planned, and thereby unfruitful, efforts – that has given group interaction observation and analysis somewhat of a bad name among many researchers in experimental social psychology and other fields that study groups. So the first rule to be noted is:

***Rule #1:** Plan ahead. Before you start, plan what you will do all the way through to the end. How will you record interaction? How will you code it? What analyses will you run?*

The following five rules deal with aspects of that overall plan.

Focus the study

Using records of group interaction as the site for a fishing expedition is costly and often unrewarding. It is usually not a good idea to try to induce what questions you want to ask about group interaction by prolonged or repeated reading of transcripts or viewing of videotapes. It is far better to know what variables and relations you want to study before you start. So the second rule is:

***Rule #2:** Focus the study. Know what you want to know about group interaction before you start the project. Make sure those features you wish to examine are captured in your recording and coding system and that you can do analyses that will speak to the questions you have in mind.*

Broaden the scope

At the same time, you probably will get some good ideas about your groups and their interaction patterns as you work with records of that interaction. If you do get a good idea about interaction in your groups as you go along, but it calls for data that was not a part of your initial recording–coding–analysis plan, you may not be able to explore it because you didn't record it, didn't code for it, or didn't retain it as a distinction when you aggregated data for your analyses. If you collect a broader set of data than you plan to use, you can ignore any that isn't useful; but if you collect only the data that you plan to use at the outset, you won't be able to ask any additional questions even if your results make them compelling. So, somewhat in contradiction to rule #2, the third rule is:

Rule #3: *Cast your data net widely. You usually can't go back and collect additional interaction data later. Record and code for all the interaction data you might possibly want (within reason and resources), not just the data you know for sure that you want.*

Build from theory

There is great value in doing theory-guided research. Lewin was right about the practicality of a good theory. Perhaps the biggest reason that Bales' IPA system was so popular, and became almost synonymous with group interaction analysis for several decades, is that it was strongly anchored in a good general theory. That theory not only guided the development of categories and the training of coders; it also pointed to key questions – about phases, equilibrium shifts, types of leaders, and so forth – on which many analyses focused. Many other contemporaneous coding systems, not strongly theory-anchored, disappeared without use by anyone but their inventors. A good fourth rule is:

Rule #4: *Build your coding system on good theory. It can guide your development and refinement of categories, and point to the key questions that need to be asked.*

Search the data

At the same time, any given set of data is likely to be much richer than one theoretical perspective can encompass. It is useful to be sensitive to what is happening in your groups, both as a way of expanding the bases on which you ask your predesigned theoretical questions and as a way of looking at your groups from other theoretical perspectives. While the data won't really "speak to you" and tell you what they mean, you can none the less "listen to them" with alternative theoretical perspectives in mind, and thus find alternative meanings in them. Again, somewhat in contradiction to rule #4, the fifth rule is:

Rule #5: *Pay attention to your data. It may contain far richer research information than is encompassed by your theory.*

Be flexible

Building a coding system is an arduous process. When a researcher has developed one – especially one that is an elegant reflection of the guiding theory – there is a strong temptation not to change the coding system come what may. Often, though, the actual behavior of the groups whose interaction is being observed does not fit neatly into the elegant coding system. Groups do things not covered in the system (and not expected by the researcher); and they don't do things that were expected – or do them in ways different enough from expectations that consistent coding is jeopardized. Often, too, coders do not find the distinctions between coding categories as tractable, in situ, as they seemed to the researcher working in the abstract. The coder training process itself offers a good

opportunity both to pilot test the system and to make improvements in it. Sometimes, elegance has to give way to common sense! So the sixth rule is:

Rule #6: *Be flexible. Elegance is nice; but reliable coding is necessary. Use rater training and other pilot coding efforts to modify the coding system, even if some nontheory-driven categories must be added.*

Remember: It is understanding group interaction, not your coding system, that matters!

Concluding comments

We will close this section and the chapter with a repetition of some of the main ideas we have tried to communicate here. Observing group interaction and analyzing information from records of such observation is a difficult, costly, and potentially frustrating endeavor, but in our view it is a sine qua non for understanding dynamic and adaptive processes in groups. Doing so entails a number of methodological choices and several strategic ones as well. All of those choices have consequences for what questions can be asked of the data, hence what one can learn from the endeavor. It is better to go into the project with a strong theory-based set of questions; but it is essential to go into it with an understanding of the implications of choices made early in the process (e.g., what kind of record to get) for what options will be available for later choices (e.g., what kinds of analysis to do). It is better to get more data than you will need; but it is essential to know what you need (for the questions you want to ask) and make sure that you get it. Finally, take care not to let the nature and use of your recording and coding system, rather than the nature of your groups' interaction patterns, become the focus of your work.

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CHAPTER TWENTY-THREE

Communication Technologies, the Internet, and Group Research

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Communication technologies and the Internet have transformed groups in the workplace and in our communities. Members of groups no longer need to be co-present: to be together in time and place to collaborate, to share information, or to socialize. As a result, new group forms have emerged in organizations and on the Internet. Two examples of these new group forms are virtual teams in organizations and social support groups on the Internet.

Fast communication systems, more powerful processors, and new software enable organizations to form virtual teams of members who are separated temporally and spatially. For example, British Petroleum Co. has developed a virtual team network that allows people to work cooperatively and share knowledge quickly regardless of time, distance, and organizational boundaries (*Harvard Business Review*, 1997). The network gives users access to communication technologies, such as videoconferencing, electronic blackboards, scanners, faxes, and information databases. British Petroleum also has an in-house intranet that contains a growing number of home pages where experts in different technical areas describe their expertise and provide information for fellow employees. The company has reported benefits of the virtual team network such as: improved interactions between land-based drilling engineers and offshore rig crews, the avoidance of a refinery shutdown because technical experts at another location could examine a corrosion problem remotely, and a reduction in reworking during construction projects because designers, fabricators, construction workers, and operations people could collaborate more effectively. According to the company's estimates, the virtual team network saved at least \$30 million in its first year alone (*Harvard Business Review*, 1997).

Thousands of support groups have been established on the Internet (Alexander, Wille, & Hollingshead, in press). In the last few decades, Americans have turned increasingly to support groups for aid in coping with physical illnesses, addictions, and mental health

problems. Members of support groups have common goals that are to share information, to offer and to receive emotional support, and to release built-up stress (Ballinger & Yalom, 1995). Internet support groups exist for a large number of afflictions ranging from cancer, AIDS, rape, incest, fat acceptance, shyness, addiction, suicide, and even rare illnesses like male breast cancer. Many traditional face-to-face support groups such as Alcoholics Anonymous and Parents without Partners have established groups on the Internet. Unlike face-to-face support groups, Internet support groups have no specific meeting places or times and are accessible 24 hours a day, seven days a week. Internet support groups allow individuals who live in remote areas, who are too sick to leave their homes, or who want anonymity when discussing their problems, an opportunity to participate. It is estimated that more than 10 million Americans belong to support groups that meet regularly face to face (Katz, 1993), but it is unknown how many Americans belong to Internet support groups.

As indicated in the above examples, technologies that support group communication and collaboration provide many benefits to groups by linking people who have common goals and interests but are separated in time and space. They enable organizations to develop effective teams from workers who are geographically distributed; they improve the group's access to databases inside and outside the organization; and they enable the organization to hire and retain the best people, regardless of location (Townsend, DeMarie, & Hendrickson, 1996). They also allow individuals who want to participate in a support group, but not in a face-to-face setting due to logistical or personal reasons, to connect with similar others in a more anonymous setting (McKenna & Barge, 1998). But these technologies can also present challenges to the groups that use them (Hollingshead, *in press*). Virtual teams can lack the camaraderie and the development of close personal relationships of their face-to-face counterparts (Melymuka, 1997). And in Internet support groups, cases have been documented of participants feigning illness and suffering either for fun or for receiving the attention and sympathy that they have been unable to get in appropriate ways (Grady, 1998). In these cases, other participants expressed feelings of suspicion, anger, and betrayal.

The study of technology and groups is important for several reasons. As communication technologies become a larger part of our work and social lives, it is important to understand their short-term and long-term effects on group processes and group outcomes. Communication technologies also represent an important means for experimentally controlling group interaction processes, and thereby provide a useful tool for the study of group communication and decision. Researchers can use computer-mediated communication to separate and isolate components of group interaction processes to further understand how complex communication processes impact group decisions in face-to-face as well as in computer-mediated settings.

This chapter discusses research on the social psychological effects of communication technologies on the behavior of groups and of their members. It begins with a classification system and description of group communication technologies. It continues with a discussion of the role of communication technologies in group research, and with a presentation of important empirical findings. The chapter concludes with a discussion of how communication technologies will transform the ways that group researchers conduct their studies and with some directions for future research.

A Classification of Technologies that Support Groups

McGrath and Hollingshead (1993, 1994) classified technologies into four major categories based on the functional role that the technology plays in the work of the group: (1) providing or modifying within-group communication (i.e., Group Communication Support Systems or GCSS); (2) supplementing information available to the group or its members by information drawn from databases (i.e., Group Information Support Systems or GISS); (3) providing or modifying external communication with those outside the group (i.e., Group eXternal Support Systems or GXSS); and (4) channeling or modifying the group's task performance processes and task products (i.e., Group Performance Support Systems or GPSS). That classification system was developed in the early 1990s when the World Wide Web was in its infancy. This updated version includes a brief description of some collaboration technologies available via the Internet. As in the original classification system, any given technology may serve more than one of these four functions. This chapter will focus primarily on research that deals with those technologies that serve the first function: providing or modifying within-group communication.

GCSS: Technologies that provide or modify within-group communication

In contrast to face-to-face communication, all GCSS permit, but do not require, group members to be spatially separated from each other – in different buildings, different cities, different countries, or merely in different rooms – while they are communicating. Some GCSS support asynchronous communication for group members acting in different time periods; some require that group members interact synchronously.

GCSS also vary in the channels that are available to group members: visual, auditory, text and graphics. For example, telephone conferencing does not allow for nonverbal communication exchange. The importance of that reduction of modalities depends on the particular task(s) and activities in which the group is engaged, the experience of the group with the technology, and the degree to which group members have a shared conceptualization of relative expertise (Hollingshead, 1998a, 1998b; Hollingshead, McGrath, & O'Connor, 1993).

GCSS often alter communication times, as well as the sequence and synchrony of messages (McGrath & Hollingshead, 1994). For electronic communication systems, the flow of a given communication cycle entails a finite (though relatively short) transmission time, a fairly substantial composition time (because typing is slower than talking), and perhaps an extensive editing time. In asynchronous computer communication systems, there may be no automatic feedback about the reception of a message, and there may be no unambiguous cues regarding acknowledgment and feedback – such cues are usually available for face-to-face or for synchronous computer, video, and telephone communication. Hence, there is no direct means for a sender to know that his or her message has been received by any particular potential receiver.

GCSS differ in the size, nature, and ambiguity of the set of interactive partners. In face-to-face groups, the set of interactive partners is likely to be relatively small and that

Table 23.1. A Typology of Group Communication Support Systems

<i>Modalities available</i>	<i>Synchronous</i>	<i>Asynchronous</i>
Visual	Video conference	Videocassette exchange
Audio	Phone conference	Voice mail Audiotape exchange
Text, graphics	Computer conference	E-mail FAX
Internet	News groups Chat rooms	Home pages, Web sites

set is by definition a closed set. It is much more difficult for researchers to identify who is and who is not a member in Internet groups. For example, in many news groups, such as Internet cancer support groups, there are literally hundreds of people who post at least one message to the news group. Some individuals post messages often, daily or weekly; some post infrequently, biweekly or monthly, and some members post only once (Alexander et al., in press). A large percentage of individuals who subscribe to news groups regularly read messages by other members, but never post messages themselves. These individuals are typically referred to as lurkers (Wellman & Gulia, 1998). Lurkers rarely participate in surveys of news groups, so little is known about who they are and about their motivation to read the messages of the news groups. Although lurkers are subscribers, it is debatable whether these individuals can be considered group members (McLaughlin, Osborn, & Smith, 1995).

Table 23.1 provides examples of GCSS organized by the modalities provided by the technology (video, audio, text/graphics), and the temporal distribution of members, that is, whether they are communicating synchronously or asynchronously. All of these technologies can support communication between members who are co-present or are geographically distributed. The organizing scheme also includes categories for Internet technologies, although World Wide Web browsers such as Netscape and Internet Explorer can support videoconferencing, audio conferencing, and document sharing via the Internet. See McGrath and Hollingshead (1994) for more detail about many of these technologies.

GISS: Supplementing information available to the group

All individuals have access to many bodies of information or knowledge from sources other than “online” communication with group members. These sources include quantitative databases, such as sales records and production and cost data, and qualitative databases or archives, such as information stored in libraries and newspaper files.

Intranets are technologies that support knowledge distribution among networks of teams within organizations. The types of knowledge that are available to group members

on intranets can include: (i) human resources; (ii) sales and marketing activities; (iii) financial information; and (iv) design and manufacturing specifications and innovations (Bar, Borrus, & Hanson, 1998). Another example of GISS is information management programs that organize schedules, files, contacts, and other information on desktops to facilitate information exchange with other members. Microsoft Outlook, which comes pre-loaded on many PC-compatible computers, is one such information management program.

GXSS: Supporting external communication

This function is a special case of both the GCSS function and the GISS function, already discussed. In general, the types of support systems already described under GCSS are applicable to GXSS as well. That is, communication between the group (or its members) and key agents external to it can be done with systems using any of the three combinations of modalities (video, audio, text/graphics), and patterns of temporal distribution described for GCSS systems. Consequently, much of what has already been said about the types of GCSS applies, as well, to the group's external communication system.

At the same time, one can consider interaction with individuals outside the group as accessing another kind of information database, thus a special case of GISS. Organizations are increasingly able to interconnect seamlessly their intranets with those of their clients, partners, suppliers or subcontractors, via secure "extranets" (Barr, Borrus, & Hanson, 1998). For example, a provider of software has established extranets that allow established customers to obtain upgrades and provide feedback to the software designers. Other extranets link companies with consulting firms that advise end-users on the application of its products. Extranets create knowledge management networks that reach beyond traditional organizational boundaries.

GPSS: Modifying the group's task performance

Since before 1950, practitioners have devised ways to improve group effectiveness, and specifically to help groups avoid what Steiner (1972) subsequently called "process losses" by modifying how the group approaches its task. All of the systems used in earlier decades did not involve use of electronic or other "hi-tech" devices. Computer-based group performance support systems, also called GDSS or group decision support systems, are relatively recent developments (see Jessup & Valacich, 1993, for discussion). Group performance support systems vary on the type of task support provided to groups, the size of groups that can use the system, and whether a trained facilitator is necessary (McGrath & Hollingshead, 1994).

Electronic systems that provide direct task support for groups usually incorporate an array of "modules," each of which structures a different subset of a group's tasks or different portions of the group process on a given project. For example, a GPSS might include tools or modules for electronic brainstorming; for structuring various forms of evaluation and voting (rating, ranking, weighing, pick one, pick any, etc.); for identify-

ing stakeholders and bringing their assumptions to the surface; for exchanging anonymous or identified comments on any or all topics. In the late 1980s and early 1990s, most of these GPSS were in the form of “decision rooms,” especially equipped computer labs supporting synchronous groups with co-located members. Most groups used these systems to augment their face-to-face decisions. Efforts are underway to develop these systems to support asynchronous and synchronous groups via the Internet.

Social Psychological Effects of Technology on Groups

Several scholars have presented literature reviews that examine the impacts of technologies on groups (e.g., Hollingshead & McGrath, 1995; Kiesler & Sproull, 1992; McLeod, 1992, 1996). Most of these reviews have compared the interaction processes and outcomes of computer-mediated groups to those of face-to-face groups. Several of those reviews have reached the same conclusions about the state of knowledge in this area. Namely, that much of the empirical research is fragmented, and that more theory-guided and programmatic research is needed (e.g., Hollingshead & McGrath, 1995; McLeod, 1992). Rather than reiterate the general findings and conclusions made in those reviews in this chapter, this discussion will focus on studies that support some general findings that are particularly important and relevant to the study of groups in social and organizational settings. These studies also demonstrate how researchers can use communication technologies to learn more about group interaction in face-to-face as well as in computer-mediated settings. Those findings are:

- 1 Nonverbal communication and paralanguage play an important role in the exchange of information, particularly for people who know each other well.
- 2 Computer-mediated communication can lead to information suppression: a reduction in the amount of information that computer-supported groups discuss and use in their decisions relative to face-to-face groups.
- 3 Status differences among members affect patterns of participation, influence, and group outcomes in similar ways in both face-to-face and computer-mediated groups.
- 4 Groups adapt to their communication medium quickly, so many of the observed effects in comparisons between face-to-face and computer-mediated groups may disappear over time.

1 Importance of nonverbal and paralinguistic cues in information exchange

Nonverbal communication conveys information outside spoken language in the form of facial expressions, kinesics, visual behavior, and proxemics (Harper, Wiens, & Matarazzo, 1998). Paralanguage or paraverbal communication involves how something is said and not the actual meaning of the spoken words. Some examples of paralanguage are the cadence, tone, and number of pauses in a spoken message (Harper, Wiens, & Matarazzo,

1978). Nonverbal communication and paralanguage help to regulate the flow of communication (e.g., the timing of turn taking) and aid in the expression of emotion (McGrath & Hollingshead, 1994).

Many individual differences exist in how speakers and listeners use nonverbal and paralinguistic communication (Scherer & Ekman, 1982). For example, depending on the person and the situation, prolonged eye contact may signal attention, understanding, confusion, agreement, conflict, confidence, disbelief, or nothing. In addition, eye contact can serve as a sign to others to participate in a collaborative search for information when speakers have trouble retrieving information (M. Goodwin & C. Goodwin, 1986). For people in close personal or work relationships, nonverbal and paralinguistic cues may have more information value than for strangers. Members learn how to interpret the meaning of others' nonverbal and paralinguistic communication through their conversations and shared experiences over time. People in close relationships rely more on nonverbal and paralinguistic cues to retrieve, communicate, and evaluate information than strangers, and are negatively affected when they do not have access to either nonverbal or paralinguistic communication when they make decisions. This was demonstrated empirically in two experiments presented by Hollingshead (1998a).

In Experiment 1, dating couples and strangers worked together on a general knowledge test that assessed knowledge in five different domains in one of two communication environments: face to face, or via a synchronous computer conferencing system that supported text-based communication and that prevented the exchange of paralinguistic and nonverbal communication cues. The results showed that face-to-face dating couples scored significantly better on the task than computer-mediated dating couples, and better than pairs of strangers in either communication media conditions. (There were no significant differences between conditions for individual-level knowledge.) Further analyses indicated that face-to-face dating couples did better because they were better able than dyads in the other conditions to determine which partner knew the correct answer on questions where only one member was correct prior to discussion. In these situations, dating couples tended to look at one another more and worked together more to remember information than strangers, and this was positively associated with performance.

Experiment 2 took a closer look at the respective roles of paralinguistic and nonverbal communication in transactive memory systems by investigating three additional communication conditions: (1) note passing with visual access; (2) talking without visual access; and (3) note passing without visual access. The computer-mediated conferencing system used in Experiment 1 was much like note passing without visual access. Dating couples worked on the same knowledge task as in Experiment 1 in one of the three communication conditions. The results showed that dating couples pooled knowledge more effectively in the note passing with visual access and in the talking without visual access conditions than in the note passing without visual access condition. In other words, the dating couples did better when they had access to either nonverbal or paralinguistic communication than when they had access to neither. This finding is consistent with previous research indicating that nonverbal communication and the associated paralinguistic communication are highly redundant (Williams, 1977). For example, confidence can be communicated through tone of voice or prolonged eye contact. When people in close

relationships use a communication medium that precludes access to nonverbal cues, they can adjust their communication effectively when they have access to paralinguistic cues and vice versa.

It is likely that face to face was the primary mode of communication in everyday life for the couples who participated in these experiments. However, e-mail may be the primary mode of communication for people in some work relationships, for example, colleagues at different universities who are collaborating on a project. In such collaborations, nonverbal and paralinguistic communication cues may not be as important for effective communication. The functions of paralinguistic cues in group interaction can be partly replaced in text-based form using a variety of techniques. Punctuation and capitalization can be used to communicate emphasis or confidence (Hollingshead, 1998b). For example, "YES!!!!" clearly indicates strong agreement.

Computer-supported groups can replace the expressive function of nonverbal cues by use of special text-based symbols and conventions. Emotions and sentiments can be created by putting together keyboard symbols to represent facial expressions. For example, ";-)" signifies a wink. These text-based facial expressions are often referred to as "emoticons." More research is needed to examine how naturally occurring groups that interact primarily via e-mail, such as virtual teams in organizations, embed emotion, and communicate subtle meanings, emphasis, understanding, and agreement through text.

2 Information suppression in computer-mediated groups

A number of studies have found that computer-mediated groups exchange less information than face-to-face groups. In some cases, this reduction can lead to poorer outcomes.

Straus and McGrath (1994) examined the quality and quantity of group performance on three different tasks with and without computer-mediated communication. The three tasks were brainstorming, solving a problem with a correct answer, and making a decision that did not have a correct answer. In general, face-to-face groups were more productive than computer-mediated groups, that is, they generated more discussion and possible solutions on all three tasks. However, the two media did not differ in the average quality of task performance. For features of the group's interaction patterns, and for members' reactions to their experience, there was an interaction between medium and task type. For brainstorming tasks where group members only generated ideas, computer-mediated and face-to-face groups did not differ on these variables. For problem-solving and decision-making tasks, face-to-face groups differed from computer-mediated groups on affect and cohesion.

Hollingshead (1996b) examined the impact of procedural factors on information sharing and group decision quality. Groups worked on an investment decision that was structured as a hidden-profile task where critical information was distributed unevenly among members prior to group discussion (cf. Stasser & Stewart, 1992). Groups instructed to rank order the alternatives, compared to groups instructed to choose the best alternative, were more likely to fully consider all of the alternatives, exchange information about unpopular alternatives, and make the best decision. But these effects

occurred only in face-to-face groups. In computer-mediated groups, there was general information suppression (i.e., members exchanged little information about decision alternatives) and no effect of group decision procedure. Groups expressed more difficulty communicating and reaching consensus in the computer-mediated conditions. Taken together, these data suggest that procedural aspects of group discussion which improve information exchange and group decisions in face-to-face settings may not have the same effect in computer-mediated settings.

The information suppression effect of computer-mediated communication was also found in Hollingshead (1996a) and in McLeod, Baron, Marti, and Kuh (1997). These two studies will be discussed in more detail in the next section. Future research needs to address whether this information suppression effect is stable over time with established groups that communicate primarily via e-mail.

3 Status, anonymity, and participation in computer-mediated groups

Status is “a characteristic around which differences in cognitions and evaluations of individuals or social types come to be organized” (Berger & Zelditch, 1977, p. 5; also see Ridgeway, this volume, chapter 15). In other words, status embodies those characteristics that lead groups to think about members in terms of their personal characteristics and what contributions they can make to the task at hand. Such characteristics include but are not limited to expertise, tenure, gender, age, and ethnicity.

Low-status members in face-to-face groups participate less and exert less influence on group decisions than high-status members (see Bonito & Hollingshead, 1997, for a review). Low-status members tend to yield more in decision making than high-status members (Schneider & Cook, 1995). In addition, low-status members care more about acceptance by high-status members, and may conform more to their views (Humphreys & Berger, 1981). These findings suggest that when a low-status member of a face-to-face group has information that is critical for a group decision, he or she may be reluctant to contribute that information to the group, and that high-status group members may be less likely to attend to it even if the low-status member decides to contribute it. This situation can lead to negative outcomes for the group.

One possible solution to the problem of inhibited participation of low-status group members, suggested in previous research, is to change the group’s medium of communication from face to face to a computer network. Many studies have revealed that groups interacting via computers have more equal participation among members than groups interacting face to face (e.g., Clapper, McLean, & Watson, 1991; Daly, 1993; Dubrovsky, Kiesler, & Sethna, 1991; George, Easton, Nunamaker, & Northcraft, 1990; Hiltz, Johnson, & Turoff, 1986; McLeod, 1992; Rice, 1984; Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Straus, 1996; Straus & McGrath, 1994; Zigurs, Poole, & DeSanctis, 1988). This general finding has been labeled the “participation equalization effect.” The general explanation for the effect is that people feel less inhibited when interacting through a computer network as a result of the reduction in social cues that provide information regarding one’s status in the group. Because people communicating electronically are less aware of social differences, they feel a greater sense of anonymity and detect less

individuality in others (Sproull & Kiesler, 1991). It is important to note some common elements across this set of studies. These studies were conducted during one experimental session with ad hoc groups consisting of students in a laboratory setting. It is also important to note that this finding was observed across a variety of communication technologies.

Several studies showed no evidence of the participation equalization effect in computer-mediated groups (Berdahl & Craig, 1996; Hollingshead, 1996b; Lea & Spears, 1991; McLeod & Liker, 1992; Spears & Lea, 1992; Watson, DeSanctis, & Poole, 1988; Weisband, 1992; Weisband, Schneider, & Connolly, 1995). What explains these seemingly contradictory findings? One possible explanation is that status differences among members within the groups may have been differentially salient across studies. Some studies experimentally controlled the status of participants within the group with mixed results. Dubrovsky et al. (1991) showed that when groups made controversial decisions through a synchronous computer conferencing system, patterns of participation and influence among members in mixed-status groups were more nearly equal in the computer-supported than in the face-to-face condition. They concluded that the reduction of status cues led low-status members in the computer condition to feel less inhibited and to participate relatively more in the discussion. However, Spears and Lea (1992) observed that when member identities were known or were visually available, status differences persisted even in a computer-mediated setting. Scott and Easton (1996) found that influence patterns among members who had high or low influence in their face-to-face groups were maintained in a computer-mediated setting. Saunders, Robey, and Vaverek (1994) also provided evidence that status differences are maintained in computer-mediated contexts: physicians and hospital administrators were afforded higher status in an asynchronous computer conference than were nurses.

Hollingshead (1996a) investigated the problem of inhibited participation of low-status group members more directly. The most important information for solving a problem was given to just one group member in a three-person group. The groups were composed such that the critical information required to make the best decision was held only by the low-status member in mixed-status groups, and randomly given to one member in equal-status groups. (Status was controlled and was defined in this study by age and experience.) The results indicated that mixed-status groups made poorer decisions than equal-status groups, in part because low-status members were less likely to share their critical information in the group discussion. The effects of status did not interact with communication media for quality of group decision, indicating that the effects of status persisted in computer-mediated interaction. However, status and communication media did interact on measures of information and perceived influence: computer communication attenuated the impact of status on these measures, primarily by suppressing information exchange and the perceived influence of all members.

McLeod et al. (1997) reported similar findings in an experiment comparing face-to-face groups with anonymous and identified computer-supported groups. Minority opinion holders expressed their arguments most frequently under anonymous computer communication, but the influence of the minority arguments on private opinions and on group decisions was highest under face-to-face communication. These results suggest that

the conditions that facilitate the expression of minority arguments may also diminish the influence of those arguments.

Weisband, Schneider, and Connolly (1995) examined the extent to which mixed-status groups label individuals according to social status. In a set of three experiments, they uncovered no evidence of the participation equalization effect when the group members were clearly identified in unequal status groups. High-status members talked more and were perceived as contributing more to the final decision than low-status members. When status labels were hidden and low-status members were in the majority, status differences in participation were slightly reduced, though not eliminated, but status differences in influence virtually disappeared. The investigators concluded that status labels and the impressions formed from those labels have a larger impact on participation and influence than communication media.

The question has arisen of whether the participation equalization effect was an artifact of the pragmatic and technical demands of that communication medium and of the experimental studies that have been reported (Spears & Lea, 1994; Weisband et al., 1995). The participation equalization effect observed in computer-mediated groups may be an indication of how the medium reduces the baseline of each member's participation rather than how the medium leads to increased participation of low-status members during the group discussion (McGrath & Hollingshead, 1994; Spears & Lea, 1994). It takes more time to type a message on a computer network than it does to say that same message verbally. In the experiments cited above, the computer sessions were at least as long as those face-to-face group meetings; however, the amount and the rate of communication in the computer-mediated setting were much less. Another possible technological explanation for greater egalitarian participation patterns in computer-mediated settings is that electronic group members have the ability to participate without interruption, since turn taking is not a norm in a computer-mediated environment (Weisband et al., 1995).

Even though status differences were controlled in several studies described above, the experimental status manipulations were relatively minor and may not apply in organizations in which status differences are much larger and have organizational consequences (Spears & Lea, 1994). Status labels are expressed in various ways in computer-mediated groups in natural settings. An e-mail address provides information that can serve as a status label and often includes clues about the name, the occupation, and the nationality of the sender. For example, for locations in the United States, the address suffix indicates whether the sender works for an institution of higher education (.edu), the government (.gov), a non-profit (.org) or for-profit organization (.com). Members of online groups can identify themselves in their messages by using either their given names, a pseudonym, or no name to maintain a sense of anonymity. Members also express and develop identities through signature files. Signature files appear at the end of messages and might consist of professional titles, quotes, pictures, or other information. For example, a doctor who posts messages to one of the Internet cancer support groups includes a disclaimer as a signature file indicating that the contents of his messages are not generated as part of a professional evaluation. Even though this file is probably meant to protect him from malpractice, it reminds participants that

he is a doctor, and therefore solidifies his role as a medical authority (Alexander et al., in press).

4 Diminished effects of computer-mediated communication on groups over time

Longitudinal research comparing the impact of computer-mediated and face-to-face communication over time has brought into question findings of previous studies that have found significant differences in performance between face-to-face and computer-mediated groups. That research has shown that computer-mediated communication hinders the interaction process and performance of groups initially, but over time, groups can adjust successfully to their mode of communication (see McGrath, Arrow, Gruenfeld, Hollingshead, & O'Connor, 1993 and Arrow et al., 1996 for overviews).

Hollingshead, McGrath, & O'Connor (1993) examined the task performance effects of computer-mediated and face-to-face groups over time. As a requirement of an advanced undergraduate psychology class, students were randomly assigned into groups and took part in a weekly 2-hour lab session for 13 weeks. In those sessions, groups worked on tasks that were cognitive in nature and fit into one of these four categories of the task circumplex (McGrath, 1984): idea generation, intellectual, decision making, or negotiation. Each group was randomly assigned to a communication medium (either face to face or synchronous computer conferencing system that supported only text-based communication).

The results showed that computer-mediated groups had poorer task performance than face-to-face groups initially, but after three weeks there were no task performance differences. When face-to-face groups were shifted to the computer-mediated communication condition for two weeks midway through the study, they experienced a similar decrement in performance. This finding suggested that inexperience with the technology rather than inexperience with group members explained the initial performance difference. This research is important because it suggests that static findings – even those that are apparently robust over studies – may not be robust over time and with increased experience with the communication technology. Arrow (1997) examined the change in group structure over the 13 weekly work sessions, and found that computer-mediated groups showed patterns supporting a robust equilibrium model: fluctuation in early time periods, then stability later. Arrow et al. (1996) using a similar methodology, replicated many of the findings described in Hollingshead et al. (1993) and in McGrath et al. (1993).

Walther's work on the interpersonal and relationship aspects of computer-mediated communication over time complements the findings of Hollingshead et al. (1993). Prior research on the relational aspects of computer-mediated communication has suggested strong depersonalizing effects of computer-mediated communication due to the absence of nonverbal cues (Kiesler, Siegel, & McGuire, 1984). Walther and Burgoon (1992) studied the effects of time and communication channel (asynchronous computer conferencing vs. face-to-face meetings) on relational communication in groups composed of three undergraduate students. The groups completed three tasks over several weeks' time. The results indicated that members of computer-mediated groups felt less connected to

one another initially. Over time, members of computer-mediated groups expressed more positive feelings about one another that approximated those expressed by members of face-to-face groups. Walther (1996) illustrated a new perspective on hyperpersonal communication, subprocesses pertaining to receivers, senders, channels, and feedback elements in computer-mediated communication that enhance interpersonal impressions and relations relative to face-to-face communication.

Current Research Trends

Recently, researchers have begun to examine more closely the interpersonal and social aspects of online communication and the Internet, focusing primarily on community and culture. A number of edited books (e.g., Gackenbach, 1999; Jones, 1995, 1997, 1998; Kiesler, 1997; Kollock & Smith, 1998) and empirical studies have been published on this topic. The bottom line is that even though members of online groups are physically isolated from one another and have some degree of anonymity, the experience of belonging to an online group can be very real. Online groups can have a strong group identity (Bouas & Arrow, 1996; McKenna & Barge, 1998). Members can build close personal relationships (Alexander et al., in press). Subcultures and minority factions can develop (Latané & Bourgeois, 1996; Latané & L'Herrou, 1996). Online groups can influence member behavior off line, and can have important real-life consequences for their members (McKenna & Barge, 1998).

Conclusions and Future Research Directions

Face-to-face interaction is no longer a prerequisite for classifying a collection of individuals as a group. Understanding the impacts of technologies on groups over time will become more important in the 21st century, as technologies become more sophisticated and support communication of an increased bandwidth. It is possible that current text-supported communication technologies on the Internet such as e-mail, news groups, and chat rooms will become v-mail (video mail), video groups, and virtual coffeehouses. But it is also possible that those text-based communication technologies will persist and will continue to be used by groups in the future. When does visual access to other group members improve interactions and lead to positive individual, group, social and organizational outcomes and when does it hinder interaction and lead to negative outcomes? Previous research has begun to answer that question. Future research on the social psychological effects of technologies will help us to predict what types of group communication technologies will emerge (or won't emerge) in the future and will help us to explain the social and psychological impacts of these technologies on groups and their members.

Communication technologies present important advantages to group researchers from a methodological standpoint as well. As the studies described in this chapter indicate,

they give researchers an opportunity to isolate and control aspects of face-to-face interaction such as anonymity, physical distance, nonverbal communication and paralanguage in order to learn more about their specific impacts on group interaction and performance. In some cases, they can allow researchers to test theory that for practical reasons is difficult to test in a face-to-face setting (e.g., Latané & L'Herrou, 1996).

Davis and Stasson (1988) reported the difficulties inherent in conducting group research. These included the large number of participants needed to conduct group studies, adequate lab space, and the time and effort to code interaction. Communication technologies and the Internet can alleviate these difficulties. Virtual group research laboratories can be created and used on the World Wide Web to recruit participants, to conduct experiments, to administer surveys, and to code group interaction data. This will reduce group researchers' reliance on subject pools and lab space in their departments. Group research in social psychology should flourish in the future due to the growing interest and importance of communication technologies in our social and organizational lives, and to the opportunities afforded by communication technologies and the Internet that make it feasible to conduct group research.

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CHAPTER TWENTY-FOUR

Procedural Mechanisms and Jury Behavior

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The citizen's jury has a long and distinguished history as a way of administering justice in Western civilizations (see Hastie, Penrod, & Pennington, 1983; Kalvin & Zeisel, 1966). Stemming from early British common law, the right to a trial by a jury of one's peers has been present in many cultures throughout history, and serves as a cornerstone of the U.S. legal system to this day. However, many of the laws and procedures governing how juries are used, chosen, instructed, and so forth, have been formalized through reliance on tradition and intuition. In more recent times, many of these procedures have been questioned, for reasons of both fairness and practicality. Thus, numerous controversies have arisen about how, when, and in some cases whether, juries should be used. In the United States, many of these controversies have been addressed by appeals to the U.S. Supreme Court (e.g., *Ballew v. Georgia*, 1978; *Lockhart v. Mcree*, 1986; *Williams v. Florida*, 1972; *Witherspoon v. Illinois*, 1968). Unfortunately, in many cases, empirical evidence addressing these questions was either sparse or non-existent.

Partly in response to the controversies mentioned above, the study of juries (or more typically and unfortunately, jurors) has been a common practice in social psychology, particularly in the United States. Juries provide a natural context for many of the basic social psychological processes deemed central to the field: impression formation, attribution, social influence, social comparison, attitude change, etc. all come into play in the typical courtroom. Juries are asked to make important decisions about people and their behavior. They are presented with different types of information from different sources. They must evaluate the validity of the information presented, the truthfulness of the information sources, and the viability of the arguments presented by both sides. They must make

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judgments about motives and intentions of the relevant actors associated with the specific behaviors of interest. And at the end of the trial, they must, as a group, reach a consensus concerning the implications of the evidence for the questions at hand.

This last phase, the group consensus process, has served as a major focus for small-group research in social psychology (Davis, 1980; Stasser, Kerr, & Bray, 1982; Tindale & Davis, 1983). Juries must deliberate and reach a single group decision, placing the focus squarely on the group level of analysis. Juries are also fairly easily simulated in laboratory settings, where some number of heretofore strangers come together for a brief period of time with a common purpose. In this way, laboratory groups and juries share a number of similar features. In addition, experimental participants find it relatively straightforward to role-play a jury situation, and often find the experience enjoyable. Thus, it is not surprising that mock jury research has been, and still is, one of the dominant paradigms in small group research in social psychology. It has fostered both theoretical knowledge about how groups process information and reach consensus on complex tasks, and practical knowledge on the conditions under which juries are best capable at carrying out their mandate – rendering justice in a fair and unbiased manner.

Other chapters in this volume focus on various aspects of the basic knowledge obtained, in part, from research using a mock jury paradigm (particularly Stasser & Dietz-Uhler, this volume, chapter 2). Our focus is oriented toward how aspects of courtroom and legal procedures can and do influence jury decision making. Our emphasis on procedural mechanisms stems from both their importance and their often under-appreciated role in jury behavior. All task-performing groups follow some type of procedure while attempting to reach their goal. Some of these procedures are informal, implicit, and governed by shared norms. However, procedures can also be formal, explicit, and governed by statute. Many of the controversies surrounding juries involve formal procedures, such as mandated jury size, consensus rule, empanelling procedures, and rules for appropriate juror behavior during deliberation. As such, much of the research discussed here concerns attempts to address these issues. But other procedures are more informal and often not recognized as programmatic or normatively governed interpersonal patterns of behavior at all. For example, juries are not usually directed to discuss “joined” charges in any particular order, or provided instructions on when and how often to poll verdict preferences. Yet such informal procedures can and do influence both the processes and outcomes of decision-making groups – including juries (Davis, 1984; Kameda, 1996). From a practical standpoint, if certain informal procedures typically lead to better jury performance, they can be formalized and included in standard rules or instructions. Thus, justice can be better served by understanding how both formal and informal procedures influence jury behavior.

In an attempt to impose some structure on the rather large body of research on courtroom procedures and juries, we have divided the chapter into three sections: (a) procedures that occur prior to the actual courtroom proceedings (e.g., jury selection); (b) trial/courtroom procedures (e.g., presentation of evidence, judges instructions, etc.); and (c) procedures guiding jury deliberations. However, these are not clearly identifiable categories, since procedures at one stage often impact both the procedures and their implications at other stages. In addition, we have attempted to focus mainly on research using actual or mock juries, in contrast to jurors, the more common research target. However,

due to the difficulty of doing group-level research, some rather important issues have only been addressed at the individual juror level. In some cases, simulations or “thought experiments,” based on empirically tested models of jury behavior, have been used to help bridge the gap in knowledge. However, there are still many areas where our conclusions must remain tentative due to a lack of group-level research. This remains a weakness in social psychological research on juries since there is plenty of evidence to show that group-level phenomena are not always commensurate with individual-level reactions. Thus, we start (and finish) this chapter by pointing out the need for more research on juries as opposed to jurors, because it is on the former that the burden of rendering justice rests. In addition, much of the research discussed here is based solely on the U.S. jury system – an issue to be addressed later. Some of the research discussed in later portions of the chapter relies on some standard models of jury decision making. Thus, a brief discussion of such models precedes the review of the literature. (For a more formal and complete discussion of these models, see Stasser, Kerr, & Davis, 1989, and Stasser & Dietz-Uhler, this volume, chapter 2.)

Formal Models of Jury Decision Making

Actual jury behavior is difficult to observe directly. Jury deliberations are conducted in private to encourage jurors to deliberate freely and without the concerns that would naturally arise in the presence of an outside observer. Moreover, each jury considers a unique case with unique characteristics. It would be difficult to generalize about jury behavior on the basis of a single case, or on the basis of many cases, each with its own unique evidence, cause of action, legal basis, etc. Thus, a substantial portion of the research on juries has involved formulating and testing formal models of jury behavior. These models have then been used to help address procedural questions that would be difficult to address empirically. A full review of jury models is beyond the scope of the present chapter (see Stasser & Dietz-Uhler, this volume, chapter 2, for more detailed descriptions of these models). However, they are similar in a number of respects. Thus, we will simply describe some of the main features, using social decision scheme (SDS) theory (Davis, 1973) as a focal point.

SDS theory posits that group decision making in general can be conceptualized as a combinatorial process. In order to reach consensus, group members must combine their varying preferences in such a way as to reach a final group response. For criminal juries (on which most of the modeling work has been focused), the individual member preferences are for verdicts (typically guilty vs. not guilty, but some charges have multiple verdict categories, e.g., 1st degree vs. 2nd degree murder, etc.). In a 12-person jury deciding between guilty and not guilty, there are 13 ways in which the members can array themselves over the response alternatives: 12 for guilty and 0 for not guilty, 11 for guilty and 1 for not guilty, . . . , 0 for guilty and 12 for not guilty. SDS theory then posits that the ways in which the different member preference arrays lead to specific jury verdicts can be described by an SDS matrix. The matrix contains the conditional probabilities associated with each possible jury outcome (guilty, not guilty, or hung), given a specific member

Table 24.1. Two-thirds Majority Wins, Defendant Protection Otherwise Social Decision Scheme Model

<i>Juror preference distribution</i>		<i>Jury verdict distribution</i>		
<i>Guilty</i>	<i>Not guilty</i>	<i>Guilty</i>	<i>Not guilty</i>	<i>Hung</i>
12	0	1.00	0.00	0.00
11	1	1.00	0.00	0.00
10	2	1.00	0.00	0.00
9	3	1.00	0.00	0.00
8	4	1.00	0.00	0.00
7	5	0.00	0.75	0.25
6	6	0.00	0.75	0.25
5	7	0.00	0.75	0.25
4	8	0.00	1.00	0.00
3	9	0.00	1.00	0.00
2	10	0.00	1.00	0.00
1	11	0.00	1.00	0.00
0	12	0.00	1.00	0.00

array (e.g., 7 members for guilty vs. 5 for not guilty). Based on extensive empirical work, the SDS matrix described as “two-thirds majority wins, defendant protection otherwise” tends to provide a relatively good description of the combinatorial process for juries. This model is described in Table 24.1. As shown in the table, for a 12-person jury, factions containing 8 or more members are quite powerful and will lead the jury to their preferred verdict with probabilities near 1.0. (Note that, for convenience, probabilities of 1.0 and 0 are used in the models, but are meant to convey probabilities near those values.) When no faction contains two-thirds of the members, the model predicts that juries will either hang (about 25% of the time) or coalesce around the not guilty alternative (about 75% of the time). This asymmetry toward protecting the defendant appears to be a function of the reasonable doubt criterion used in most criminal trials (MacCoun & Kerr, 1988).

A number of jury models similar to the one described above exist. Some are extensions of the general SDS approach, while others are formalized in other ways (i.e., computer models like JUS, Hastie, Penrod, & Pennington, 1983). For example, Kerr’s (1981) social transition scheme model looks at the changes from one member preference array (e.g., 7 for guilty, 5 for not guilty) to a different array (e.g., 8 vs. 4) over time. Similarly, Stasser and Davis’ (1981) social interaction sequence model focuses on member changes in both confidence and verdict over time. Probably the most sophisticated model of jury behavior is JUS (Hastie et al., 1983). The basis of the model is an influence function which specifies whether, where, and when a juror in a given verdict faction will move to another verdict faction. The model also takes into account individual differences in resistance to influence, aspects of jury selection, and other procedural factors (jury size, decision rule, etc.). Although each of these models differs in some important ways, they

all predict that factions containing at least two-thirds of the jury members will probably win out in the end.

The aforementioned models all focus on criminal trials where the decision alternatives are discrete verdict categories. However, civil juries often are asked to reach consensus on dollar amounts or percentages of liability. In order to encompass continuous response domains, Davis (1996) formulated the social judgment scheme (SJS) model. Since faction size is often not a viable concept for continuous response formats, the SJS model focuses on relative distances between members along the continuum. It then weights each member in terms of influence in the groups using an exponential function based on the sum of the relative distances. In general, the model gives little weight to members whose preferences are discrepant from most other members, and greater weight to members who are similar (in terms of distance) to most other members. Thus, the model argues that shared preferences (shared here meaning similar rather than identical) are more likely to end up being chosen by the group/jury (Tindale & Kameda, in press). Although formulated only recently, it has provided adequate fits to data from a number of mock civil jury experiments (Davis, Au, Hulbert, Chen, & Zarnoth, 1997; Davis, Stasson, Parks, Hulbert, Kameda, Zimmerman, & Ono, 1993).

Procedures Prior to Trial: Jury Selection

The Sixth Amendment to the U.S. Constitution guarantees the right to a trial by an impartial jury of one's peers in the jurisdiction where the crime was committed (Way, 1980). Although this may appear clear and straightforward, the actual procedures used to provide such a jury have often been questioned. For example, crimes that receive a lot of publicity in the area where they were committed often make finding an impartial jury in the jurisdiction where the crime was committed difficult (McConahay, Mullin, & Frederick, 1977). Additionally, if the defendant in a trial is a member of an under-represented group, what does a "jury of one's peers" really mean? Thus, the Courts have had to rule on a number of cases concerning the procedures used to empanel juries (e.g., *Duren v. Missouri*, 1979; *Thiel v. Southern Pacific Company*, 1946; *Witherspoon v. Illinois*, 1968).

There are three main factors that determine the composition of a specific jury (Hans & Vidmar, 1982). First, is the venue or location of the trial where the jury will be chosen. This depends, in part, on the type of trial (e.g., criminal vs. civil, state vs. federal, etc.), but mainly on the location of the crime/cause of action, and the parties. The second aspect concerns the panel of eligible jurors from which the specific jury will be drawn. Each particular court district has a list containing the eligible jurors for that district. In theory, such lists should contain all the eligible jurors in a given area, but in practice, the lists are often incomplete, especially in areas of high population density. Courts have defined an impartial jury panel as one that represents a fair cross-section of the community, and have held that officials cannot systematically or intentionally exclude any particular group (*Thiel v. Southern Pacific Company*, 1946). More recently (*Duren v. Missouri*, 1979), courts have set forth specific criteria that must be satisfied to demonstrate that the fair cross-section requirement has been violated.

(T)he defendant must show (1) that the group alleged to be excluded is a “distinctive” group in the community; (2) that the representation of this group in the venues from which juries are selected is not fair and reasonable in relation to the number of such persons in the community; and (3) that this under-representation is due to systematic exclusion of this group in the jury selection process. (Finch & Ferraro, 1986, p. 30)

The third aspect of jury selection involves the “voir dire” – an initial questioning of jurors in order to insure that they are acceptable to both sides in the trial. Voir dire procedures vary widely across cases and jurisdictions, with judges usually given a fair amount of leeway in defining the relevant parameters. Jurors can be “struck” or removed from a jury panel in two ways. First, jurors can be struck for “cause” if the judge finds that they could not be fair and impartial jurors. Examples of removals for cause include jurors who are relatives of witnesses or one of the parties, or jurors who express a biased attitude toward the case that would prejudice their judgment in some way. Second, each party is given a fixed number of peremptory challenges that can be used at their discretion for removing particular jurors from the panel. These are limited in number and vary in terms of the type of case.

Folk wisdom dictates (and many attorneys agree) that jury selection is one of the most important aspects of a trial (Penrod, 1980). Thus, it is somewhat surprising that there has been so little research on jury selection in general. Probably the main reason for the lack of empirical effort in this area stems from the practical difficulties involved. In actual trials, 40 or 50 (or more) potential jurors may be questioned in order to find the 12 (14 with alternates) to actually serve. To recreate such procedures in a more controlled environment would be very costly in terms of time and participants. Thus, much of the research that has been done has either restricted itself to the individual (juror) level of analysis, or used mathematical or computer simulations. Most research on jury selection has revolved around two recent controversies. The first involves the use of social science methods to aid one side or the other in jury selection (Kairys, Schulman, & Harris, 1975; Shulman, 1973). The technique referred to as “Scientific Jury Selection” began as an attempt to aid defendants in political trials in the late 1960s and early 1970s. It was controversial on two dimensions – whether it was ethical (Etzioni, 1974; Moskitis, 1976) and whether it actually worked (Saks, 1976; Saks & Hastie, 1978). The research focus was mainly on the latter issue.

Proponents of the method (Shulman, 1973; McConahay, Mullin, & Frederick, 1977) argue that using social science methods can be useful in all three aspects of jury selection. Survey techniques and interviews can be used to demonstrate that a particular venue contains mostly jurors who have been biased by pretrial publicity or have attitudes that would make them inappropriate for jury service in a particular trial (McConahay et al., 1977). They can also be used to challenge the “representative cross-section” assumption of a particular jury roll (Shulman, 1973). However, most of the controversy has surrounded the use of social science to help select the actual jury during the voir dire process.

For the actual selection phase, the social science method involves conducting, prior to voir dire, a sample survey of the community addressing demographic, personality, and attitudinal characteristics of the potential jurors. The data are then used to create profiles of “good versus bad” jurors for the party for which the survey was administered.

Typically, multiple regression and profile analysis techniques are used to assess which demographic/attitudinal variables are most useful. Then, during the voir dire, the questions posed are designed to reveal the juror characteristics necessary to categorize them in terms of the profile (see Kairys et al., 1975 for a more thorough description of the techniques involved).

Proponents of the technique argue for its validity based on the outcomes of trials where it has been used – usually acquittals or hung juries (Christie, 1976; McConahay et al., 1977). However, it is difficult to ascertain the effectiveness of a technique based on only case studies. In addition, Saks (1976) has argued that most of the aforementioned cases were weak in terms of incriminating evidence, many of them involving charges of conspiracy, which is a difficult charge to prove.

Attempts to assess the efficacy of scientific jury selection with more valid techniques have provided somewhat mixed but, at best, weak evidence for its usefulness. Saks (1976) reported the results of a survey study where large numbers of valid attitudinal and demographic measures could account for only 13% of the variance in juror verdict, while evidence accounted for 33%. Hastie et al. (1983) took a number of demographic measures of jurors in a large-scale jury simulation experiment using a murder trial and found little if any evidence for their ability to predict juror verdict preferences. However, Horowitz (1980) ran an experiment attempting to directly test whether scientific methods were better able to pick favorable jurors than were law students. His results suggested that for trials where political attitudes were directly relevant, the scientific methods were somewhat more effective in that they led to fewer guilty verdicts. However, for the murder trial, the scientific selection method was no better at influencing jury verdicts than were the law student selections.

In an attempt to address the potential efficacy of scientific selection techniques across all three aspects of the selection process (venue, panel, and actual jury), Tindale and Nagao (1986) performed a series of computer simulations. The simulations assumed that only the defense was using scientific techniques and that jury decision making could be represented by a 2/3 majority decision model (see Table 24.1). Tindale and Nagao assessed the expected jury verdicts under a variety of different assumptions concerning biases in the jury panel and the ability of the techniques to identify more or less defense-favorable jurors. The simulations showed that quite powerful effects on jury verdicts could be found if one could exchange a biased jury panel (80% or 60% favoring guilt prior to deliberation) for an unbiased one (50% favoring guilt). The effects for targeting particular jurors for challenges in the selection process showed weaker albeit meaningful effects. Increases in not guilty jury verdicts ranged from non-existent for very weak or very strong cases to about 12% for moderately strong cases (where the 2/3 majority model shows its steepest slope across strength of case). However, these later simulations assumed at least some ability to predict juror's verdicts from their answers to voir dire questions.

A more recent controversy surrounding jury selection procedures involves the notion of “death qualified” juries (Thompson, 1989). For capital cases (those that might lead to the death penalty), prior to 1968, judges would allow jurors to be challenged for cause if they had any negative feelings toward the death penalty. Because many capital juries also decided whether the death penalty is warranted, this practice seemed appropriate. However, early research looking at the relationship between death penalty attitudes and

verdicts showed that people in favor of the death penalty were also more conviction prone (e.g., Zeisel, 1968). Based in part on this early evidence, death qualification procedures were questioned in *Witherspoon v. Illinois* (1968). Although the court continued to allow the procedure, it provided a set of criteria to be used in the death qualification procedures and also opened the door to eliminating the procedure if more and better research could demonstrate that it produced juries biased against the defendant in terms of verdict.

Since 1968, a number of studies have shown that jurors who are death qualified according to the *Witherspoon* criteria are more likely to vote guilty than are jurors who would be removed from the jury (e.g., Cowan, Thompson, & Ellsworth, 1984; Ellsworth, Bukaty, Cowan, & Thompson, 1984; Thompson, Cowan, Ellsworth, & Harrington, 1984). Although the findings are not totally consistent, two recent meta-analyses have both shown that the effect at the juror level is reliable if not large (Allen, Mabry, & McKelton, 1998; Filkins, Smith, & Tindale, 1998). In addition, Haney (1984) showed that simply sitting through a death qualification voir dire can predispose jurors toward conviction. However, the Supreme Court chose to ignore the research evidence in their *Lockhart v. McCree* (1986) decision. One of the reasons the Court gave for paying little heed to the social psychological research was that the bias had not been demonstrated at the jury level.

Interestingly enough, recent computer simulations have shown that the effect of death qualification at the jury level is actually quite small (Filkins et al., 1998). Since only about 17% of the population in general would be ineligible for jury service based on death qualification procedures, and the effect size is fairly small, the maximum impact at the jury level was less than one more guilty verdict in 100 trials using the average effect size. Using the largest effect size in the sample, it rose to slightly more than three additional guilty jury verdicts in 100 trials. Obviously more research is needed on both this issue and the effects of jury selection in general. But the current evidence does not seem to support the widespread belief among lawyers and laypersons alike that jury selection plays a major role in determining final jury verdicts.

Procedures During Trial: Evidence Presentation and Judges' Instructions

Order of evidence presentation

One of the key issues in any set of procedures concerns the order in which things are carried out. Since courtroom procedures are enacted over time, some aspects must occur prior to others. Concerning evidence presentation, the current system in the United States provides that the party with the burden of proof (the prosecution in criminal trials or the plaintiff in civil trials) presents its case first. Thus, a number of researchers have attempted to ascertain how this order influences juror verdict preferences. Overall, the findings on this issue are quite consistent; jurors' verdict preferences are more strongly influenced by later than earlier information (i.e., a recency effect – Furnham, 1990; Kassin, Reddy, & Tulloch, 1990; Thibaut & Walker, 1975).

Unfortunately, very little research has looked at presentation order and jury verdicts. However, what evidence there is at the jury level implies that juries also show recency effects. Horowitz and Bordens (1990) had juries make either one or several judgments (e.g., causality, liability, punitive damages, etc.) in a civil trial context. Some of the juries were only given information concerning a specific judgment (and were asked only about that judgment) while others were presented with all the relevant information, and asked to make all of the judgments after receiving all of the information. Although complicated by other factors, their findings indicated that, for juries making all of the judgments, in comparison to juries that made only one judgment, information relevant for later judgments in the sequence tended to influence the earlier judgments. The reverse was not found. Thus, juries seem to place more weight on later evidence as well. Given that many procedures are in place to protect the rights of the accused, the recency effects would seem to be consistent with such goals.

Inadmissible evidence

A key question concerning a jury's ability to carry out its mandate is whether it can focus only on the information that is legally relevant. Thus, by legal standards, juries should be immune to factors such as the race, gender, etc. of the defendant and/or witnesses, pre-trial publicity, and evidence ruled inadmissible during the trial. The research evidence is not completely consistent on these issues, but in general, it seems that jurors (and potentially juries) are not proficient at ignoring information that is legally irrelevant. For example, Bodenhausen and Lichtenstein (1987) found that in cases where the crime and racial stereotypes converged, the defendant's race affected juror verdicts. Such effects may be difficult to protect against because racial stereotypes are often automatically accessed (Bargh, 1997; Wegner & Bargh, 1998).

The same pattern seems to hold for other extralegal influences. Information obtained through a third party (hearsay), from illegal wiretaps, and through inappropriate questions by lawyers all have been found to impact juror verdicts (Kassin & Studebaker, 1998; Rind, Jaeger, & Strohmets, 1995; Schuller, 1995). Unfortunately, instructions by judges to ignore such information tend to have little if any effect (Kassin & Studebaker, 1998; Thompson & Fuqua, 1998). However, a number of variables appear to moderate the influence of inadmissible evidence. The effect of inadmissible evidence is reduced for more serious charges (Rind et al., 1995). In addition, information that leads jurors to question the credibility of the inadmissible evidence (e.g., an unreliable source, poor quality wiretap, etc.) tends to reduce or ameliorate its effects (Fine, McClosky, & Tomlinson, 1997; Miene, Borgida, & Park, 1993; Schuller, 1995). A recent study by Kassin and Sommers (1997) showed that inadmissible evidence that was made to appear unreliable had no effect on verdicts, while the same evidence declared inadmissible for due process reasons increased guilty verdicts.

Although extralegal information tends to influence individual juror verdict preferences, there is some evidence that its impact on jury verdicts is considerably less. For example, Kerwin and Shaffer (1994) compared jurors and juries in a case where incriminating evidence was presented as either admissible or inadmissible. The manipulation of admis-

sibility had no impact on juror verdict preferences, but juries were less likely to convict if the incriminating evidence was presented as inadmissible. Kaplan and Miller (1987) found that jury deliberation tended to ameliorate the effects of an attorney's behavioral style on verdicts, whereas individual jurors were influenced by this extralegal factor. However, why jury deliberation reduces such biases is unclear. There is some evidence (Hastie et al., 1983) that errors made by an individual juror, if voiced during deliberation, can be corrected by other jurors. Thus, if inadmissible evidence is brought up during deliberation, one of the other jury members may point out that it is inadmissible and thus not relevant for the verdict decision.

Recent work on group decision biases in general (Kerr, MacCoun, & Kramer, 1996), however, points to a different explanation. Kerr et al. showed that a majority group decision process can reduce biases present in the individual juror verdict distribution without any assumptions concerning the content of deliberation. They also demonstrated that the Kaplan and Miller (1987) results could be explained in this way (see also Kerr, Niedermeier, & Kaplan, 1999). In addition, Kerr et al. (1996) showed that majority processes can both increase and decrease the impact of extralegal information on jury as opposed to juror verdicts depending on the initial individual verdict preference distribution. Thus, further investigations of the effects of deliberation on different types of biases using different trials with different initial verdict distributions (i.e., stronger vs. weaker cases) are necessary before any definitive claims concerning this issue can be made.

Trial complexity and procedural remedies

Over the past 20 to 30 years, a recurring criticism of the jury system has revolved around a jury's ability to deal with the complexities of modern trials and legal technicalities. As the legal system has become more complex, and as new methods of investigation and evidence gathering have become common, the information-processing demands placed on jurors has increased drastically. These issues have been readily apparent in cases involving medical malpractice and antitrust issues, but have also surfaced in criminal trials due to issues surrounding DNA testing and other types of probabilistic evidence. Thus, much research has focused on whether juries are competent to make judgments in complex trials. In addition, a number of researchers have assessed the efficacy of various different procedural mechanisms for aiding juries in understanding and using the complex information available.

Heuer and Penrod (1994) discuss three different types of complexity: complexity of evidence, quantity of evidence, and complexity of law. All three can create problems for juror comprehension. Evidence complexity has been most often looked at either in terms of technical jargon (Bourgeois, Horowitz, & FosterLee, 1993; Scott & Tindale, 1989) or the use of probabilistic information (Smith, Penrod, Otto, & Park, 1996; Tindale, Filkins, Smith, Sheffer, & Thomas, 1992; Wells, 1992), although amount of evidence has also received some attention (Heuer & Penrod, 1994; Horowitz, FosterLee, & Brolly, 1996). In general, evidence complexity can cause problems for juror comprehension, but the problems do not seem overly severe. Horowitz et al. (1996) found that jurors were less able to distinguish between plaintiffs in a multi-plaintiff civil trial when cognitive load

was high. In addition, they were less likely to realize the pro-plaintiff nature of the trial evidence. Bourgeois et al. (1993) found similar results for a jargon-filled trial, but the effects were attenuated when jurors were allowed to look at the trial transcript.

Although much of this research has only looked at the effects of complexity at the juror level, there is reason to believe that juries will have fewer problems with complexity – at least when defined in terms of quantity. In general, memory performance by juries is superior to that of individual jurors (Hinsz, 1990; Vollrath, Sheppard, Hinsz, & Davis, 1989). In addition, there is some evidence that misstatements by individual jurors can be corrected by other jurors during deliberation (Hastie et al., 1983). However, complexity not related to quantity may be just as problematic for juries as it is for jurors. Complexity of information in general has been found to lead to less systematic information processing and a reliance on heuristics to make sense of the information (e.g., Eagly & Chaiken, 1993; Kahneman, Slovic, & Tversky, 1982). Although not tested in a jury context, evidence tends to show that groups exacerbate such heuristic tendencies (Argote, Devadas, & Melone, 1990; Tindale, 1993). Thus, it is unlikely that jury deliberation attenuates difficulties in understanding found at the juror level.

The use of probabilistic information remains controversial in both civil and criminal trials (Smith et al., 1996). One of the main fears presented by legal scholars was that probabilistic information, due to its quantitative and scientific nature, would dominate other types of evidence (Tribe, 1971). However, the research results show the opposite; probabilistic information is underutilized, if it is used at all (Smith et al., 1996; Tindale et al., 1992; Wells, 1992). Smith et al. found that jurors were not prone to misusing probabilities, though on average, they used them less than normative models would warrant. Wells (1992) showed that probabilities (e.g., base rates) typically were not used by jurors unless they could relate them specifically to issues of fact in the trial at hand. Similar results were found by Tindale et al. (1992) in a civil trial context. Probabilistic information concerning the relationship between toxic exposure and cancer rates was only used by both jurors and juries if a strategy for mapping the probabilities onto compensation amounts was provided. Interestingly, attempts to instruct jurors as to the appropriate way to use probabilistic information (i.e., discussions of Bayes Theorem) have had no influence on whether and/or how jurors actually use the information (Faigman & Baglioni, 1988; Smith et al., 1996).

Probably the aspect of complexity that has received the greatest amount of research attention is complexity in law – specifically, the judge's final instructions to the jury. Here, the research evidence is not so favorable. In general, jurors (and in some cases juries) misunderstand many aspects of judges' instructions (Elwork & Sales, 1985). Part of the problem involves the "incomprehensible language" associated with legal definitions of crimes (Elwork & Sales, 1985, p. 283). For example, a recent study by Hastie, Schkade, and Payne (1998) found that scores on a memory for instructions test ranged from 0% to 67% after jury deliberations. This is particularly problematic given that the mock jurors in this study had copies of the judge's instructions during the deliberations. In addition, they found that jury deliberation did not improve jurors' understanding of the instructions. A number of researchers have also found that the instructions concerning aggravating and mitigating circumstances in death penalty cases are not well understood by jurors (Blankenship, Luginbuhl, Cullen, & Redick, 1997; Diamond, 1993; Haney

& Lynch, 1994). Haney, Sontag, and Costanzo (1994) provided evidence that these misinterpretations can lead jurors to be more likely to choose death as the appropriate penalty. Again, there was very little evidence that jury deliberation worked to reduce misconceptions.

One of the key instructions provided by judges to juries is the criterion to use for the decision to convict. In criminal trials, this is typically referred to as the “reasonable doubt” criterion. However, different jurisdictions provide very different definitions of what constitutes a “reasonable doubt” (Horowitz & Kirkpatrick, 1996; Kerr, Atkin, Stasser, Meek, Holt, & Davis, 1976; Koch & Devine, 1999). These differences have been found to drastically influence juror and jury decisions, in that more stringent definitions (restricting what is to be considered a reasonable doubt) lead to more guilty verdicts. Horowitz and Kirkpatrick (1996) found that some definitions actually led jurors to vilify the defendant. Kagehiro (1990) found that most jurors were very uncertain as to what different criteria were meant to imply (e.g., preponderance of the evidence vs. reasonable doubt) unless they were associated with quantitative (percent certainty) ranges.

Obviously, trial and instruction complexity poses a serious threat to the viability of a justice system based on jury decision making. Thus, a number of procedural remedies have been suggested, many of which have received at least some empirical support. One procedure that is now frequently used allows expert witnesses to testify on complex issues (Greene, Schooler, & Loftus, 1985). The evidence concerning how effective expert witnesses are at improving jurors’ comprehension and sensitivity is mixed at best (Maas, Brigham, & West, 1985; Penrod, Fulero, & Cutler, 1995), and it is often the expert testimony that is most difficult for the jury to follow (Bourgeois et al., 1993). However, as Bourgeois et al. showed, allowing juries access to trial transcripts may help to alleviate some of the problems due to complexity.

Probably the major procedural changes concerning legal complexity involve the timing of, and language used in, judges’ instructions to the jury (Elwork & Sales, 1985). The problems with instructions (besides rather vast differences across different jurisdictions – that is, reasonable doubt definitions – see Horowitz & Kirkpatrick, 1996) basically stem from competing purposes; instructions must be both comprehensible and legally accurate (Severance, Greene, & Loftus, 1984). Most of the emphasis has been placed on legal accuracy, but as laws become more complex, the more accurate the language, the more difficult it is to understand. However, with work, both goals can be accomplished. Avoiding legal jargon and uncommon words can lead to better comprehension (Severance et al., 1984). However, Wiener, Pritchard, and Weston (1995) found that revised death penalty instructions were somewhat more comprehensible, but jurors still made a number of reasoning errors with the “simplified” instructions. Thus, there may be limits to how effective rewritten instructions can be for legal non-experts – like jurors.

There is now considerable evidence that giving jurors the judge’s instructions prior to hearing the evidence can be beneficial (Kassin & Wrightsman, 1987; Smith, 1990, 1991). Much social cognition research has shown that a clear processing goal can aid information retention and retrieval (Wyer & Srull, 1989). Providing jurors with the appropriate standards of proof and legal definitions of crimes prior to hearing testimony provides such processing goals. Thus, it is not surprising that pre-trial instructions (typically followed by post-trial reiteration) help jurors to encode relevant evidence and use the instructions

effectively (Kassin & Wrightsman, 1987). However, there is less evidence to support the prediction that jurors recall relevant facts better (Heuer & Penrod, 1989; Smith, 1991). Except for one study which found a tendency for a confirmatory hypothesis testing strategy for a complex case (Bourgeois, Horowitz, FosterLee, & Grahe, 1995), none of the research on this issue has supported any of the potential negative impacts of pre-trial instructions (narrowing juror viewpoints, disrupting the trial, etc., see Heuer & Penrod, 1989; Smith, 1991).

Two other techniques for helping jurors/juries handle complex cases that have received recent attention are note taking and question asking by jurors (Penrod & Heuer, 1998). As with many of the aforementioned procedural issues, legal scholars have hypothesized both advantages and disadvantages associated with these juror behaviors. The empirical results have provided moderate evidence in their favor. There is some evidence that note taking can improve juror recall, mainly due to better encoding of information (FosterLee, Horowitz, & Bourgeois, 1994), though the benefits of both of these procedures seem modest at best (Penrod & Heuer, 1998). However, virtually none of the potential disadvantages emerged. Jurors did not ask inappropriate questions, the questions were not disruptive, and note taking did not lead to biased recall or more literate jurors gaining influence (Penrod & Heuer, 1998). Given that trials will continue to become more complex and that current forms of judges' instructions do not prevent juror/jury errors due to confusion (Haney et al., 1994; Hastie et al., 1998), any procedure that aids jurors' understanding of the evidence and/or instructions should be used. In addition, further innovations and evaluative research concerning these issues is definitely necessary.

Procedural Effects During Deliberation

Jury size

Interest in the effects of jury size on the decision process became focused in the 1970s when the U.S. Supreme Court decided several cases regarding how many jurors constitute a permissible jury size. Traditionally, 12 was the standard jury size, but considerations of economic efficiency prompted the use of smaller juries. In a series of decisions, the Court ruled that juries composed of fewer than 12 members are permissible, but in criminal trials the jury must be composed of at least 6 people (*Williams v. Florida* (1970); *Colgrove v. Battin* (1973); *Ballew v. Georgia* (1978)). In its decisions, the Court explicitly relied on psychological research. Subsequent empirical research therefore sought to investigate whether juries of different sizes are indeed functionally equivalent (Beiser & Varrin, 1975; Bermant & Coppock, 1973; Buckhout, Weg, Reilly, & Frohboese, 1977; Davis et al., 1975; Kerr & MacCoun, 1985; Kessler, 1973; Mills, 1973; Padawer-Singer, Singer, & Singer, 1977; Roper, 1980; Saks, 1977; Valenti & Downing, 1975). Taken as a whole, these studies do not point to any clear-cut conclusion regarding the effects of jury size on verdict outcome. The preponderance of negative findings suggests that jury size effects are subtle phenomena, if they exist at all.

However, there are theoretical grounds to believe that variations in jury size have a small but reliable effect on verdict outcome. For example, Davis, Bray, and Holt (1977)

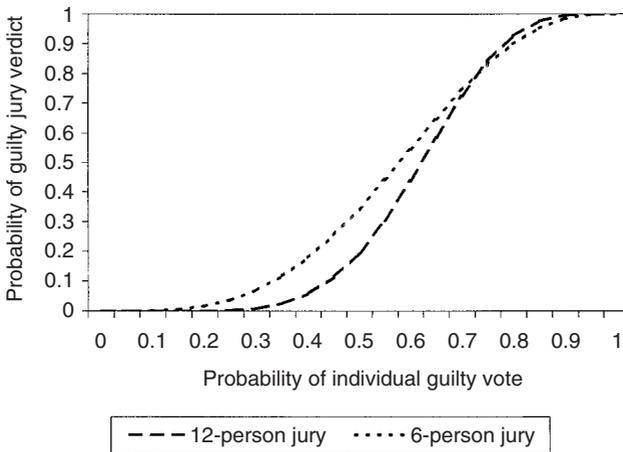


Figure 24.1. The probability of a guilty jury verdict as a function of jury size (6 vs. 12) and the probability of an individual juror voting guilty.

estimated that under certain conditions, verdict differences between 6- and 12-member juries amount to a maximum of 8%. Using assumptions consistent with empirical evidence concerning initial verdict preferences of individual jurors and the social decision scheme aggregating those preferences, the expected effects of jury size on verdict were assessed in the context of a criminal trial. As a thought experiment, Davis et al. (1977) considered the probability with which a juror favors a guilty or not guilty verdict under a simple majority, otherwise equiprobability social decision scheme. A similar thought experiment is presented here in Figure 24.1, using the 2/3 majority model presented in Table 24.1. As shown in the figure, the difference in conviction probability due to juries of different sizes is nowhere very large (largest difference is .15 in the present figure). As the probability of individual juror preference for a guilty verdict nears .00, 1.00 or 0.73, the differences due to jury size almost disappear. Above individual probabilities of .73, the largest difference between 6- and 12-person juries is predicted to be .027. Null differences in verdict due to jury size where the probability of an individual vote of guilty is .00 or is 1.0 are to be expected in "slanted cases" (Diamond, 1974). However, the more surprising prediction is very small differences when the probability of an individual guilty vote is near .70. An interesting feature of Figure 24.1 is that the difference between the two curves reverses direction when the probability of an individual voting for guilty is .73. The model predicts that smaller juries are more likely than larger juries to convict when individual jurors are leaning toward not guilty, but are less likely to convict when jurors are leaning toward guilty.

With the small, predicted differences between different jury sizes, we might ask how many subjects would be required to detect an actual difference as small as .08 (the maximum difference found by Davis, Bray, and Holt using a simple majority model). Assuming standard levels of statistical significance (.05) it turns out that samples of 62 juries of each size would be needed. Thus, in a study comparing 6- and 12-person juries,

$6(62) + 12(62) = 1116$ subjects would be required to detect such an effect. The failure of early studies to find verdict differences due to differences in jury size is therefore not surprising.

Saks and Marti (1997) performed a meta-analysis of the effects of jury size on a number of different dependent measures. They found that compared to 6-person juries, 12-person juries are more likely to contain more members of racial minority groups, deliberate slightly longer, hang more often, and appear to recall trial testimony better. In addition, there is some evidence in the three studies reviewed in the meta-analysis that 6-person juries award larger damages awards than 12-person juries. Subsequent work confirms that 12-person juries tend to give smaller money damages awards than 6-person juries (Davis et al., 1997). This could be a sign of the times in that public statements against overly large awards have been prevalent in the 1990s. Assuming that group interaction fosters pro-normative behavior, and larger groups do so more than smaller groups, one would expect smaller awards by larger juries given current societal norms.

Jury decision rule

Soon after permitting juries of fewer than 12 persons, the U.S. Supreme Court ruled that non-unanimous juries were constitutional in state criminal and civil trials. (*Apodaca v. Oregon*, 1972; *Johnson v. Louisiana*, 1972). Following these decisions, there has been considerable empirical investigation regarding the effect of decision rule on outcome. In criminal cases, Kerr et al. (1976) observed that unanimous juries hung more frequently than those using a two-thirds majority rule. Nemeth (1977) obtained a similar result when mock juries were composed of members who were divided 4 to 2 in opinion. However, a small sample of randomly composed juries showed no significant differences in outcome due to decision rule. In civil cases, the earliest empirical investigation of decision rule (Broeder, 1958) found that unanimous and three-fourths majority juries did not differ significantly in damages awarded. Similarly, Bray and Struckman-Johnson (1977) observed no significant differences in verdicts between unanimous and five-sixths majority mock civil juries. In an extensive jury simulation study, Hastie, Penrod, and Pennington (1983) also found no verdict differences due to different decision rules, but they did find that unanimous juries deliberated more thoroughly and spent more time discussing the legal definitions of the verdict categories. However, Kaplan and Miller (1987) observed that mock civil juries deciding punitive damages awarded more to the plaintiff under a unanimity rule than under a majority decision rule. Interestingly, under the unanimity decision rule, jury members made more use of normative arguments, compared to jurors in the majority decision rule condition. Because unanimous agreement is more difficult to attain than majority agreement, jurors recognizing this make more use of normative argument. Using normative arguments (e.g., “the defendant was wrong not to repair the furnace”) focuses more attention on extreme awards in the context of punitive damages, and thus the plaintiff has an advantage when the jury uses a unanimity rule to deliberate punitive damages.

Like jury size, the relationship of decision rule and verdict can also be assessed via thought experiments (i.e., computer simulations). To do so we regard group size as fixed

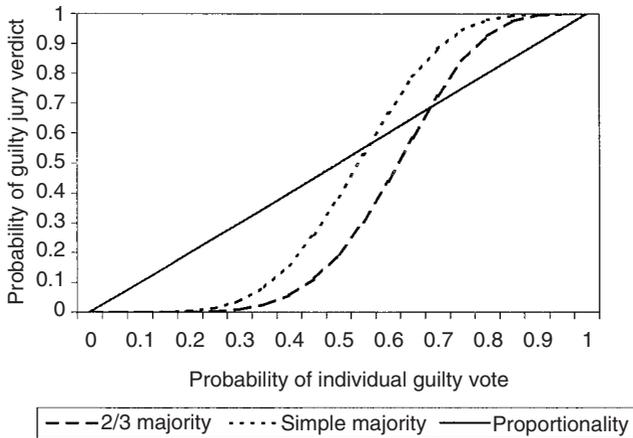


Figure 24.2. The probability of a guilty jury verdict as a function of decision rule and the probability of an individual juror voting guilty.

and vary the social decision scheme. We assume a jury of 12 operating according to one of the following social decision schemes: proportionality; two-thirds majority, defendant protection otherwise (see Table 24.1); and simple majority, defendant protection otherwise. The probability of conviction as a function of the probability of a guilty vote by jurors is given in Figure 24.2. The proportionality social decision scheme functions as a baseline of sorts; the other two curves are especially notable. The magnitude of the difference in conviction probabilities to be expected from decision scheme alone is small, except for cases where the probability of an individual juror voting for guilty is near .5 – the maximum level of individual uncertainty. Here, juries functioning under a simple majority model are considerably more likely to convict than juries functioning under a two-thirds majority model.

Straw polls – Method and timing

Procedures for jury deliberations are most often informal, with few explicit mechanisms mandated by the court for managing actual deliberations. Conventional procedural mechanisms tend to arise in the informal context of jury deliberation, stemming from shared social norms. Some of these informal procedural mechanisms have been shown to play a causal role in the structure and outcome of the jury's decision. One such procedural mechanism that arises informally is the informal ballot, or straw poll. It is often the case that the jury will take one or more straw polls during the course of its deliberation. The straw poll can serve to manage the jury deliberation process; the act of publicizing member preferences can facilitate consensus.

The straw poll can be used as a predictor of final verdict. In their study of actual juries, Kalvin and Zeisel (1966) found that the first poll taken by a jury predicts that jury's

verdict via a simple-majority social decision scheme. Sandys and Dillehay (1995) replicated this result, finding that the final verdict is consistent with the initial majority in 93% of the cases sampled. But Kalvin and Zeisel (1966) explicitly assumed that first-ballot preferences are equivalent to predeliberation opinions, concluding that verdicts are predetermined by the preference of individual jurors when they first enter the jury room. This assumption is probably unwarranted in most cases. Sandys and Dillehay (1995) found that only 11% of the actual juries they sampled had taken a vote prior to any discussion. Thus, in 89% of the juries sampled, the first ballot poll was taken after deliberation began, often well into the deliberation. In fact, juries spent an average of 44 minutes deliberating before taking the first ballot poll. While the connection between first poll and verdict is an interesting one, the predeliberation preferences of individual jurors are subject to the influence processes occurring prior to the first poll.

In addition to being a predictor of verdict, experiments using mock juries have shown that the polling process can itself play a causal role in the final decision. For example, Kerr and MacCoun (1985) found that public voting resulted in a higher likelihood of a hung jury, compared with secret voting. Davis et al. (1993) found that mandated polling, in contrast to deliberation only, increases the likelihood of a hung jury. At the same time, mock juries that do reach a decision after polling tend to award larger damages than mock juries that do not poll.

The timing of the poll can also affect the jury's decision and deliberation process. In the Davis et al. (1993) study, mock juries decided a product liability case in which a teenage farm-worker was injured; those juries that took a poll late in the deliberation tended to make larger damage awards than mock juries that polled early in the deliberation. In addition, the timing of the poll can affect the length of time spent deliberating. For example, in one study groups prompted to take a public poll early in the discussion reached a decision twice as quickly as groups prompted to take a public poll late in the discussion (Nadler, Au, Zarnoth, Irwin, & Davis, 1999).

Polling sequence can also affect the jury consensus process. For example, the particular sequence of straw votes has been found to influence succeeding individual voter opinion about defendant guilt. Davis, Stasson, Ono, and Zimmerman (1988) composed 6-person mock juries so that they were evenly divided (3, 3) between members inclined to vote guilty (G) or not guilty (NG). When polls were taken within factions (e.g., 3 mock jurors in a row saying, "Guilty"), it was found that the fourth juror was influenced by the preceding faction's votes. Moreover, the fourth juror polled was more likely to be influenced by a sequence of 3 not guilty roll-call votes than a sequence of 3 guilty roll-call votes. This asymmetry in interpersonal influence is perhaps a manifestation of the leniency bias (MacCoun & Kerr, 1988) reflecting defendant protection norm (Tindale & Davis, 1983); not guilty majorities have greater power than guilty majorities in establishing group-level consensus. Indeed, subsequent research (Davis, Kameda, Parks, Stasson, & Zimmerman, 1989) uncovered that the third juror polled in a 6-person jury can be significantly influenced to change preference if he/she is polled immediately after 2 jurors publicly stating their preference for not guilty. This change occurred after only 2 preceding votes, and is normatively consistent.

However, this directional bias observed in individual opinion change, although consistent with widely shared cultural norms that value the two types of errors differently

(e.g. “better that the guilty be acquitted than the innocent be convicted”), was sensitive to vote timing (i.e., whether a poll was taken early or late in the discussion period) (Davis et al., 1988). Counter-normative preference change (not guilty to guilty) was fairly likely at an early poll in response to a contrary preceding sequence, but was not observed to occur later, suggesting perhaps that discussion had increased norm salience and an awareness of contrary opinions. However, norm-consistent change (guilty to not guilty) was more likely later than earlier, again suggesting the importance of normative factors that may have been emphasized in discussion.

Despite the significant influence of polling sequence and timing on individual member preferences, the final verdict of the jury remains robust against social influence pressures observed at the individual level (Davis et al., 1989). That individual polling sequence effects fail to have influence at the group level demonstrates that the individual–group relationship is not straightforward. The expressed preferences of individual jurors, in the form of straw votes, may be: (a) insincere (a strategic calculation that is itself designed to influence events); (b) sincere but highly unstable (based on little or inaccurate information, confused reasoning, etc.); (c) sincere and highly stable (a consequence of a well-developed cognitive structure, powerful motive, etc.); or (d) an accident, due to misunderstood instructions, apathy, or the like (Davis et al., 1989). The instability of expressed preferences may be especially high in a straw poll, where the vote was explicitly made for the purpose of collecting information and not binding. Regardless of the explanation, there is a clear demonstration that Kalvin and Zeisel’s (1966) conclusions about the easy predictability of jury verdict must be approached with caution: individual-level juror preferences may not accurately forecast group outcomes.

Context-dependence of decisions involving multiple charges

The jury’s task often involves making more than one decision. For example, a jury deciding a homicide case might be instructed to consider several different charges: the principal charge upon which the defendant is accused (e.g., first-degree murder) and one or more lesser-included charges (e.g., second-degree murder, manslaughter). In such a case, the verdict form (filled out by the foreperson to indicate the jury’s verdict) would request the jury first to indicate its verdict on the charge of first-degree murder. If the verdict on that charge is not guilty, the jury would next render a verdict on the charge of second-degree murder, and so on. If at any point the jury finds the defendant guilty on one of the charges, the decision procedure stops, and the jury does not consider any of the remaining lesser-included charges. This procedure requires the jury to make a series of decisions on several charges that arise from the same conduct.

In other situations, the defendant could be charged with separate crimes arising from separate conduct. For example, a defendant might be charged with possession of a controlled substance and also with resisting arrest. In a typical criminal case, these charges would be joined so that evidence on each charge would be presented within a single trial, and a verdict on each charge would be rendered by a single jury. Similarly, it is common for a plaintiff in a civil case to include more than one claim or cause of action against one or more defendants. For example, a plaintiff suing her employer for discrimination

might allege two claims in her complaint: violation of civil rights laws and breach of contract.

The primary justification for a single jury to decide on multiple charges or causes of action is efficiency. If a separate jury were required to decide each cause of action or charge in every case, the resources consumed by such a procedure would be staggering. But implicit in this policy is an assumption that juries will decide charges in a context-independent manner. That is, it is assumed that the presence of other charges, or the order in which charges are decided, will not affect the jury's decision process. To take an example outside the legal context, rational choice theory predicts that if I prefer strawberry ice cream to vanilla, the presence on the menu of mint chip ice cream should not alter my preference for strawberry to vanilla. And the order that flavors are listed on the menu should not affect which ice cream I most prefer. Similarly, we expect that a jury's verdict on a particular charge (e.g., possession of a controlled substance) will not be altered by the presence or absence of some other charge on the verdict form (e.g., resisting arrest). And we expect that a jury's decision on any given charge will not be influenced by the order in which the charges are decided. Yet, there is ample evidence demonstrating that, in certain situations, jurors' and juries' judgments are in fact context-dependent.

Joined versus severed charges. The question of how jurors' judgments are influenced by the joining of charges has been addressed in the context of the mock criminal trial. Generally it has been demonstrated that mock jurors are more likely to favor conviction on a charge when it is joined with others. For example, Tanford and Penrod (1982) asked mock jurors to make a judgment on rape and trespass charges presented alone or joined with other charges. There was a higher proportion of guilty votes on the rape and trespass charges when they were joined with other charges, compared to when they were presented without other charges. In another study, Greene and Loftus (1981) asked mock jurors to judge the guilt of the defendant on two charges – murder and rape. The conviction rate was higher on both charges when both were joined compared to when they each were presented alone. Thus, guilt decisions on multiple charges in mock trial contexts are not independent, and there is an increase in conviction preferences when charges are presented together, compared to when charges are presented separately. It should be noted that an important limitation on both of these studies is the use of mock *jurors*, as opposed to mock *juries* which deliberate – it is unclear whether the biasing effects of joined charges would be enhanced or even mitigated by jury deliberation.

Order of consideration of joined charges. While there appears to be a bias in favor of conviction when charges are joined, the joining of charges is a practice that is unlikely to disappear, given the pressures for judicial efficiency and the problem of overcrowded court dockets in many jurisdictions. Given the apparent inevitability of joined charges in criminal cases (and joined causes of action in civil cases), a further point of exploration is the implication of the jury's consideration of charges in one order or another, given that the charges are joined in a single trial. This question was investigated in the context of a simulated criminal trial by Davis, Tindale, Nagao, Hinsz, and Robertson (1984). In this study, three logically independent charges arose out of events contiguous in time: the defendant had an argument in a bar in which a glass table was broken (criminal damage

to property). The argument turned into a fistfight (battery). After leaving the bar the defendant was alleged to have hit and killed a pedestrian while driving recklessly (manslaughter). The charges were presented in either ascending or descending order of seriousness, with the battery charge being presented second in both orders. The results for both mock jurors and mock juries showed a higher proportion of guilty verdicts on the battery charge in the descending, compared to the ascending, order. Ascending order resulted in a lower proportion of convictions than no assigned order. It appeared that deliberation neither exaggerated nor mitigated individual juror preferences. Subjects therefore did not consider the three charges independently from one another.

The results also showed a statistically significant association between guilt judgment on first and second charges. Thus, saying guilty on the first charge makes it more likely that a juror (or jury) will say guilty on the second charge. It appears that participants viewed the trial process as a whole, and were unable or unwilling to consider the charges independently. It may be that participants inferred a criminal disposition – that is, the kind of person who would recklessly kill someone is the same kind of person who would commit battery. In addition, participants may also develop complex causal links between charges regardless of lack of logical connections.

Lesser included charges and sentencing options. Charges arising from one person's separate criminal acts are often joined together in a single trial. In other situations, the jury in a criminal trial is charged with deciding on a principal charge as well as lesser-included charges for a single criminal act. For example, a jury deciding about a single homicide might be asked to decide whether the defendant is guilty of first-degree murder, second-degree murder, or manslaughter. As with decisions about charges that are joined, decisions among one principal and one or more lesser-included charges are also context-dependent. In a study of decision making of mock jurors, Kelman, Rottenstreich, and Tversky (1996) demonstrated two types of context-dependent decisions to which jurors are vulnerable. The first type, compromise effects, occur when the same option is evaluated more favorably when it is seen as falling in the middle of the set of options, rather than when it is viewed as more extreme. Kelman et al. presented mock jurors with a simulated trial scenario and asked them to determine which charge the defendant was guilty of. Mock jurors in one group chose among the following charges: capital murder, murder, and voluntary manslaughter. Mock jurors in a second group chose among: murder, voluntary manslaughter, and involuntary manslaughter. Focusing on the charge of murder reveals an interesting context-dependence: 57% of mock jurors in the first group indicated murder as their verdict preference; but only 38% of mock jurors in the second group indicated murder as their verdict preference. Thus, when murder is presented as the intermediate of three choices, it is more attractive (as in the first group) compared to when it is presented as an extreme choice (as in the second group).

Another consequence of context-dependent decision making examined by Kelman et al. (1996) is the contrast effect – this occurs when the same option is evaluated more favorably in the presence of a similar but clearly inferior option. To test for contrast effects, mock jurors in one group were given two sentencing options: jail or community service. Mock jurors in the second group chose among three sentencing options: jail, community service, or “self-esteem counseling.” While 74% of mock jurors in the first group chose

community service, 88% of mock jurors in the second group chose the same community service option. Mock jurors in the second group were faced with contrasting a favorable option (community service) with a similar but clearly inferior option (self-esteem counseling). In the face of this contrast, the favorable option of community service became even more favorable.

In several respects, the decisions made in these studies by mock jurors and mock juries depended heavily on the context in which the choices were presented. First, order of consideration influenced mock juries' (and mock jurors') judgment of the defendant's guilt on the middle charge. Second, the mere presence of joined charges increased the likelihood that mock jurors would find the defendant guilty on the target charge. Third, the framing of a charge as compromise, or middle ground, increased the likelihood that it would be selected as the verdict choice. Finally, the presentation of a sentencing option together with an inferior option enhanced the perceived attractiveness of that option. Given that juries must often make multiple decisions, or decide among multiple options, it is worthwhile to consider in advance the likely effect of such multiple decisions or options.

Special verdicts and elements of the claim. In most civil cases, the jury returns a general verdict, which identifies the prevailing party (plaintiff or defendant) and amount of damages awarded (if any). However, in some civil cases, especially where the issues are numerous or complex, the jury is required to return a special verdict. Under the special verdict system, the jury fills out a questionnaire addressing key facts in dispute. The court then enters a judgment in favor of the plaintiff or the defendant based on the jury's answers on the special verdict form. Does the procedural mechanism of type of verdict (special or general) affect the jury's decision process? Lombardero (1996) argues that there are several ways in which type of verdict form can impact the verdict. We focus here on the conjunction problem, that is, the failure to distinguish between the probability of a single fact being true and the probability of several facts being true simultaneously.

Any claim brought by a plaintiff in a civil case is composed of elements, each of which must be proved in order to prove the claim as a whole. For example, the elements comprising the claim of fraud might consist of the following: (1) A false representation of fact; (2) made intentionally by the defendant; (3) which the plaintiff relied upon; (4) which caused damage to the plaintiff. For a plaintiff to meet its burden of proof on the claim of fraud, it must prove each element of its claim by a preponderance of the evidence (i.e., with a probability greater than 0.5).

When a general verdict form is used, juries are routinely instructed that if the plaintiff has proven each element of the claim by a preponderance of the evidence, then the jury must return a verdict in favor of the plaintiff. Lombardero (1996) points out that even when the probability of each element of the claim is greater than 0.5, the probability that all elements are true simultaneously might still be less than 0.5. Therefore, the use of a general verdict form in conjunction with an instruction to find for the plaintiff if each element is proven can result in a bias in favor of the plaintiff.

However, the effects of the conjunction bias probably are not severe. First, the elements of any given claim are rarely independent from one another. Rather, the same evidence that proves one element also might prove other elements. For example, the evidence

might show that the defendant, a used car salesman, said, "This car is as good as new. It's never been in an accident." This evidence might tend to prove two elements of the claim (a false statement of fact, and made intentionally by defendant), and so the first two elements of the claim are not independent. In this situation, the probability that all the elements are simultaneously true cannot be determined simply by multiplying together the probabilities of each individual element.

A second reason that the conjunction effect is not severe is that empirical research on jury decision making suggests that juries often do not analyze the evidence in an element-by-element fashion (see, e.g., Pennington & Hastie, 1986). Instead, each juror constructs a story that best explains the juror's understanding of the evidence. After understanding each verdict choice, the juror chooses a verdict preference based on the best match between the story and the verdict choice. Because jurors often do not weigh each piece of evidence in sequence, the conjunction bias might not be as severe as it first appears. But the use of the special verdict exacerbates any bias resulting from the conjunction rule. The special verdict form simply requires the jury to answer specific questions. If the jury's answers on the special verdict form indicate that each element has been proved, the court enters a verdict in favor of the plaintiff. Thus, the jury is forced to evaluate each individual element, rather than try to construct a plausible story upon which a verdict can be based. Thus, the special verdict form exaggerates the conjunction bias. In this sense the special verdict can favor the plaintiff.

Concluding Comments

Although procedural variables are often overlooked or considered to be uninteresting from a social psychological perspective (not nearly as intuitively appealing to the conventional as "cognitive dissonance" or "psychological reactance," for example), they none-the-less play an important role in much social behavior – particularly in formal and quasi-formal task-oriented groups. Probably the reason procedural mechanisms have received somewhat more attention in research on juries is that the context within which juries perform (the legal system) is heavily governed by such operational specifics. Although there is much more to be learned even concerning juries, research to date has pointed out a number of consistent procedural influences. Some of these (e.g., the leniency bias and recency effects) tend to conform nicely to the values of the legal system in the United States (i.e., protecting the innocent is more important than punishing the guilty). However, others (e.g., incomprehensibility of judges' instructions, reductions in jury size, etc.) seem inconsistent with such values and should receive more attention from researchers and policy makers alike. More work is also needed on how aspects of jury decision making that are not governed by formal procedures operate – what procedures are used and what are their implications (e.g., order of deliberating on joined charges). And as we stated early on in this chapter, more of this work should focus on interacting *juries* rather than individual juror behavior. Although more difficult, the theoretical and practical importance of focusing on the entity (jury) that actually performs the judiciary function seems well worth the cost in time, effort, and resources.

One other limitation concerning the work on procedures and juries is that almost all of the research reviewed focused on juries (or more typically jurors) in the United States. This is not surprising given the central role that juries play in the U.S. legal system. However, as pointed out by Hackman and Morris (1978) in their discussion of group performance in general, studying what groups currently do may tell you much about how they perform, but it will not necessarily tell you much about how they could perform better. Thus, a potentially fruitful future research endeavor may be to study how citizen juries compare to legal decision-making procedures in other cultures. A recent study by Kaplan and Martin (1999) has moved in just such a direction. Juries in Spain are made up of citizens and legal experts, and Kaplan and Martin focused on the different types of influence strategies used by expert versus lay factions within the juries. It seems it would also be useful to compare all citizen juries to mixed (expert and citizen) juries, or to panels comprised completely of experts. By studying and comparing procedures from a variety of different cultures, we may be able to locate procedures, or combinations thereof, that administer justice in more optimal ways. Such comparative research should also provide a better understanding of the effects of procedural mechanisms on group decision making in general. Thus, we close with a call for more comparative and cross-cultural research on legal decision making in an attempt to learn both more about juries and potentially how to make them better.

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CHAPTER TWENTY-FIVE

Group Processes in Organizational Contexts

Joseph E. McGrath and Linda Argote

This chapter is about an interrelated set of processes that take place within, and constitute the action of, groups in organizations. Six years ago we wrote a chapter on group processes in organizations (Argote & McGrath, 1993), in which we considered four CORE processes (construction, operation, reconstruction, and external relations). In that chapter, we stressed three themes:

- 1 that groups need to be studied as intact complex systems;
- 2 that groups are adaptive systems that are in continuous interchange with their embedding contexts and their embedded members, and therefore that the focus of study needs to be not just on the group as a system, but also on the interchanges between that group and its embedding contexts and embedded members; and
- 3 that groups are dynamic systems that need to be studied over time.

Those three points can be summarized by asserting that groups are *complex, adaptive, dynamic systems*.

Since then we have come to stress those three themes even more highly than we did in that earlier chapter. They are central to our other research activities in the interim. For example, those three themes are at the heart of a theoretical formulation by McGrath and colleagues (Arrow, McGrath, & Berdahl, 2000; McGrath, Arrow, & Berdahl, in press) in which they draw on concepts from general systems theory, dynamical systems theory, and complexity theory to construct a general theory of groups. Similarly, Argote and colleagues have emphasized those same themes of complexity, adaptation, and dynamics in their studies of knowledge transfer in franchises (Darr, Argote, & Epple, 1995) and new product development teams (Olivera & Argote, 1999).

In this chapter, we will draw on our earlier chapter, and on the bodies of related work that each of us has done in the interim, to once again examine group processes in work organizations with an emphasis on those three themes. We will blend the ideas embed-

ded in the CORE processes with the ideas embedded in the Arrow, McGrath, and Berdahl (2000) theory of groups as complex systems, in the following way. First, we will sketch out some key features of the Arrow, McGrath, and Berdahl formulation – about the nature of groups, group functions, attributes of members, levels of causal dynamics in groups, and modes of group life. The rest of the chapter will deal extensively with two of the modes formulated by Arrow et al. (2000) – Formation and Operations – but not with their third “Metamorphosis” mode. Within the formation mode, we will discuss the forces that can be at play when a group forms, and variations in the kinds of groups that can thereby be created. In the operations mode, we will consider three major sets of processes that operate continuously and simultaneously in groups: (a) Coordination processes, by which the group establishes, enacts, monitors, and modifies the pattern of member–task–tool relations through which the group pursues its purposes; (b) Adaptation processes, by which the group carries out its two-way interchanges with its embedding contexts and its embedded members; and (c) Learning processes, by which the results of both coordination and adaptation processes affect the development and modification of the group itself. We will close the chapter with a brief discussion of issues that arise because groups are dynamic systems, operating within temporal and organizational contexts that show complex temporal patterns over time.

Before presenting that reformulated view of groups, however, we will make a few comments about the history of the study of groups in organizations, and about the current state of that field.

Research on Groups in Organizations

Past research on groups

There is a rich tradition of research on groups in the social sciences. The study of groups as a separate field, “group dynamics,” emerged in the United States in the 1930s under the leadership of Kurt Lewin (Cartwright & Zander, 1968). Early definitions of the field of group dynamics share much in common with the dimensions of groups we emphasize here. For example, Cartwright and Zander (1968) offered the following definition of the field of group dynamics: “a field of inquiry dedicated to achieving knowledge about the nature of groups, the laws of their development, and their interrelationships with individuals, other groups, and larger institutions” (p. 4). Cartwright and Zander (1968) further noted that characteristics that distinguish group dynamics from related fields are: its emphasis on theoretically significant empirical research; its focus on dynamics and interdependence of phenomena; its interdisciplinary orientation; and the potential applicability of its findings to practical problems. Thus, early approaches to group dynamics emphasized the interdependent and dynamic nature of groups and their embeddedness in larger social contexts.

Early empirical research reflected these important underlying dimensions of groups. For example, Lewin, Lippitt, and White (1939) examined how leadership styles affected the attitude and behavior of groups. Groups of ten- and eleven-year-olds met regularly

over several weeks under the leadership of an adult who adopted an autocratic, democratic, or laissez faire leadership style. The study examined the development of attitudes and performance over time and thereby focused on the dynamics of the groups. Interdependence of phenomena was acknowledged: the effect of one factor (e.g., leadership style) was analyzed in conjunction with the effect of others (e.g., social climate). Although the relationships among groups was not focused on explicitly in the study, it was implicitly included by examining interactions between groups meeting in the same room at the same time. A classic study by Sherif, Harvey, White, Hood, and Sherif (1961) explicitly focused on intergroup relations and the embedded nature of group life.

Although early work on groups reflected the properties of groups we emphasize here, much subsequent work neglected the dynamic, interdependent, and embedded nature of groups. In an analysis of research reported in the leading social psychological journals between 1975 and 1993, Moreland, Hogg, and Hains (1994) found that over three-fourths of the studies on groups published during this period were laboratory experiments. In the prototypical experiment, a group of strangers is brought together for a short period of time to perform a task or form a judgment in the laboratory. These groups do not have a history or expect a future. They do not exist in an embedding context where the management of relationships with other groups matters. These laboratory studies typically manipulate one (or a small number of) variables. Thus, the studies are not well suited for capturing the interdependence of group phenomena, or the complex, adaptive, dynamic nature of groups.

The prevalence of the laboratory method in social psychological studies during this period is consistent with Steiner's (1986) characterization of "paradigmatic preferences" among social psychologists. Steiner (1986) noted that several preferences characterize the work of social psychologists: focusing on the individual rather than the group as the level of analysis; manipulating behavior in the laboratory rather than studying it in more naturalistic contexts; and building theories around single rather than multiple causal factors.

In general, Moreland, Hogg, and Hains (1994) found that research on groups in social psychology decreased in the 1970s and for much of the 1980s, then increased in the late 1980s and early 1990s. Examining the popularity of specific topics over time, Moreland, Hogg, and Hains (1994) found a dramatic increase in research on stereotyping and biases associated with intergroup relations. By contrast, research on intragroup phenomena such as group composition, conflict within groups, and group performance appeared less often in social psychology journals during this period.

In a complementary analysis of work published in organizational psychology journals from 1975 to 1994, Sanna and Parks (1997) found that intragroup research on the internal processes and performance of groups had been taken up by organizational (rather than by social) psychologists (see also Levine & Moreland, 1990): 98% of group research articles published in leading organizational psychology journals during this period focused on internal processes and performance. A smaller percentage of organizational psychology articles (50%) relied on laboratory methods compared to social psychology articles employing laboratory methods (76%). The same general nonmonotonic pattern was found over time for the popularity of articles about groups in the organizational psychology journals as was described previously for the social psychology journals: research

on groups within organizational psychology decreased from the mid-1970s to the mid-1980s and then increased in the late 1980s and early 1990s.

These reviews indicate that research on groups is increasing – in both social and organizational psychology. Research that examines interpersonal relations such as stereotyping and prejudice appears primarily in social psychology journals whereas research on intragroup processes and performance is published primarily in organizational psychology journals (Sanna & Parks, 1997). Research on groups is also on the increase in management journals (Cohen & Bailey, 1997).

The current state of the field

What accounts for the increased interest in research on groups in the late 1980s and 1990s? We believe several important factors contribute, including theoretical developments, methodological developments, prevailing practical concerns, and the institutional home of the researcher.

On the theoretical side, Moreland, Hogg, and Hains (1994) presented evidence that much of the resurgence of interest in groups on the part of social psychologists, especially the increased interest in intergroup relations, was due to the influence of European and social cognition approaches to studying groups. Much of that work focuses on intergroup, rather than on intragroup phenomena. By contrast, Sanna and Parks (1997) found that the European and social cognition approaches had little influence on research on groups published in the organizational psychology literature.

We believe that much of the resurgence of interest in research on groups, especially in organizational psychology and management, reflects the increasing use of groups as the basic building blocks of organizations during the 1980s. During this period, many organizations in the United States experienced large productivity problems (Minabe, 1986). Although firms in the United States had once been more productive than their counterparts in other industrial countries, the productivity of firms in other countries, especially Japan, caught up with or surpassed U.S. productivity in many sectors during this period (Krugman, 1991). Acknowledging the remarkable productivity advances of Japanese firms, the United States looked to Japan for effective models of management. Analyses of why Japanese firms, especially manufacturing firms, were so effective cited their heavy reliance on groups and teams as a key factor contributing to their productivity (Hayes & Wheelright, 1984; Womack, Jones, & Roos, 1990). The use of groups and teams as the basic units through which tasks are accomplished increased in the United States during the 1980s (Cohen & Bailey, 1997).

The increased use of teams stimulated more research on teams. Given the time it takes to complete research and publication lags, most of the research appearing in the late 1980s – the period when publications on groups increased – would have been started in the early or mid-1980s – the period when productivity problems were most pressing. Thus, we believe a significant component of the resurgence of interest in groups was stimulated by increased interest in groups as a unit for getting work done in organizations.

Group research is increasingly likely to be done by researchers in professional schools, especially management, rather than by researchers in psychology departments. In their

study of organizational psychology journals, Sanna and Parks (1997) found that the last year in which a majority of first authors of papers published in these journals was affiliated with psychology departments was 1979. Being in management departments may expose group researchers to the practical problems practitioners grapple with as they manage their firms. For example, Paul Allaire, the Chief Executive Officer of Xerox, has argued that managing knowledge transfer across groups is a fundamental problem for firms (Allaire, 1997). Understanding knowledge transfer across groups requires a recognition of the embedded, dynamic, and interdependent nature of groups. More generally, responding to issues involved in the management of intact groups in organizational contexts requires an appreciation of the interdependent, dynamic, and embedded nature of group-level phenomena.

At the same time, new conceptual and methodological developments, arising from a variety of both basic and applied disciplines, have enabled group researchers to begin studying groups in a more systematic and rigorous way that better reflects the realities of ongoing, intact groups in organizational contexts. For example, more sophisticated statistical techniques enable researchers to examine the effects of multiple variables and their interactions on group-level phenomena. Developments in time series and process analysis let researchers begin to capture some of the dynamics of group processes and performance (see McGrath & Altermatt, this volume, chapter 22, for a review). These new advances are reflected in several aspects of recent group research. Some researchers have begun examining the dynamics of group phenomena by studying how group processes and performance change over time (e.g., Gersick, 1988; Gruenfeld & Hollingshead, 1993; McGrath & Kelly, 1986; Moreland & Levine, 1982; Weingart, 1997). Some research has begun to focus on the embedded character of groups by examining how groups manage relationships or share knowledge with other groups (Ancona & Caldwell, 1992; Darr, Argote, & Epple, 1995). Such new conceptual and methodological approaches enable group researchers to begin to capture the dynamic, interdependent, and embedded nature of groups. Thus, group research in the late 1980s and 1990s not only has increased in volume (compared to the 1970s and early 1980s), but also better reflects the realities of intact groups in organizational contexts.

A Reformulation: The Nature of Groups in Organizational Contexts

Definitions

Recent definitions of groups emphasize their complex and adaptive character. For example, Guzzo and Dickson (1996) defined a group as “made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social systems (e.g., an organization), and who perform tasks that affect others (such as customers or coworkers)” (pp. 308–309). Similarly, Cohen and Bailey (1997) defined a team in an organizational setting as a collection of individuals who are interdependent

in their tasks, who see themselves and are seen by others as an intact social entity and who are embedded in a larger social system.

These definitions emphasize several characteristics of groups: task interdependence (what one member does affects and is affected by other group members); social-psychological awareness (members perceive themselves as a group and are perceived by others as a group); and social embeddedness (the group exists in a larger social system). These definitions agree with our emphasis on the interdependent and adaptive nature of groups. We also emphasize their dynamic nature: groups exist in a temporal context.

In our view, groups are complex and intact systems, made up of *people* who become the group's *membership* (a set of interrelated members), *intentions* that become the group's *projects* (a set of interrelated tasks), and *resources* (*both tangible and intangible*) that become a group's *technology* (a set of interconnected tools, both hardware and software, by which the group does its work). The elements of those sets are interrelated with one another, within and across sets, ultimately within an overall set of member–task–tool relations that we will refer to as the group's *coordination network*.

Criterion domains

Groups always have two main intrinsic functions: the accomplishment of group projects and the fulfillment of member needs. To pursue those functions effectively, a group must also undertake a third (instrumental) function: establishment and maintenance of the group as an integral system. These three functions (*group projects*, *member needs*, and *system integrity*) point to three inherent criterion domains for considering the success of any group. A group is successful to the extent that it accomplishes group purposes (projects), fulfills member needs, and maintains the integrity of the group as an ongoing system.

The group's activities, as it pursues those functions, can involve any of three main derivative functions:

- processing information;
- managing conflict and consensus; and
- coordinating member actions.

The importance of these three functions differs among groups, depending on those groups' central projects, but all are involved to some degree in virtually all group projects. Hence, a group's effectiveness in carrying out these three instrumental functions represents three more criterion domains for considering the success of any group.

Elements of groups: Member attributes and needs; project and task requirements; technological affordances

Members come to the group with sets of attributes and needs. The attributes constitute potential bases for contributing to the fulfillment of group purposes; the needs represent

potential bases for benefiting from group membership. Member attributes include various knowledge, skills, and abilities in regard to carrying out task, interpersonal and process (or procedural) activities; various values, beliefs and attitudes; and various personality, cognitive and behavioral styles. Members also come to the group with various personal and organizational demographic characteristics, which sometimes are used by others as proxies for estimating the attributes of the other three sets (that is, their abilities, values, and personalities). Member needs include needs for achievement, for affiliation, for power/control, and for material resources.

Group projects, and the tasks that make them up, vary widely in terms of the extent to which they entail requirements for processing information, managing conflict and consensus, and coordinating member activity, and in the extent to which they require task, procedural, and interpersonal activities. The tools of a group's technology also differ in terms of how effectively they support information processing, conflict and consensus management, and coordination of member activity, and in how effectively they support task, procedural, and interpersonal activities (see Hollingshead, this volume, chapter 23).

Levels of causal dynamics and modes of group life

In our earlier treatment of group processes in organizations (see Argote & McGrath, 1993), we viewed the course of group interaction in terms of four partially time-ordered but intertwined core processes (Construction, Operations, Reconstruction, and External Relations). Here, instead, we will view a group as a system with three basic modes of its life course, within which three levels of causal dynamics are simultaneously and continually operating. The three modes are: Formation (when people, intentions, and resources come together into an intact group-as-a-system); Operation (the main portion of the group's life during which it pursues group projects and member needs); and Metamorphosis (when the group ends or becomes transformed into a recognizably different system). Throughout the course of a group's existence, three levels of causal dynamics operate continuously and simultaneously: (a) local dynamics (the "rules" governing the occurrence and recurrence of patterns of member-task-tool relations and actions); (b) global dynamics (the emergent system level or global properties that subsequently shape local dynamics); and (c) contextual dynamics (the anticipation, occurrence, and consequences of actions and events that are external to but have impact upon the system, and the group's responses to those events).

While all three levels of dynamics operate continuously, they can be considered separately for analytic purposes. In the group's operations mode (the main period of its life during which it carries out its work), the basic operation of its local dynamics can be thought of as Coordination. Local dynamics lead to the emergence of global-level variables in what can be regarded as the process of group Development. Both local and global dynamics are affected by contextual dynamics, that is, the interaction of the group with its embedding contexts. That process can be regarded as Adaptation. Both the operation of the system itself (its coordination and group development over time), and the adaptive relation between the group and its embedding contexts, can lead to group Learning.

That is, coordination, group development, and adaptation all can lead to changes in the group-as-a-system that persist over time.

Formation Processes

Forces in group formation

Both external and internal forces operate in the formation of groups, and both “top-down” and “bottom-up” (or planning and emergent) forces operate as well. This suggests four prototypical forms of groups: *Concocted* groups are top-down or designed groups impelled by outside forces (e.g., a manager); *Founded* groups are top-down or designed groups impelled by inside forces (i.e., one or more people who themselves will be members of the new group); *Self-organized* groups are impelled by bottom-up or emergent forces and internal forces; *Circumstantial* groups are impelled by the situation, an external force, and the formation of a group is emergent or bottom-up.

All four kinds of group formation apply to work organizations but with different frequencies. Most work groups are concocted, that is, created by someone outside the group who has the power to reassign people and resources. Sometimes top management members found groups of which they will be (high-status) members. Sometimes “informal” groups arise as self-organized groups (e.g., those groups that plagued the Hawthorne plant’s incentive plan). And probably circumstantial groups sometimes form within organizations, especially in the face of catastrophes or perceived threats.

Types of groups

For all of these forms of groups, we can think of “group types” in terms of two factors: (a) whether the group gives priority to group projects or to member needs; and (b) the importance given to, and the timing with which, different aspects of the group (members, tasks, tools) are selected and different sets of relations (member–task, member–tool, task–tool) are established. We can consider three types of group project-oriented groups (which Arrow, McGrath, & Berdahl, 2000, call *work groups*) and three types of member needs-oriented groups (which those authors call *clubs*).

The three types of work groups, that emphasize completion of group projects are:

- 1 *Teams*, in which the members and the member–tool relations are primary, and the sets of relations are expected to last for a long (or indefinite) time;
- 2 *Task Forces*, in which the project and the member–task relations are primary, and where the group is expected to continue only until that project is completed; and
- 3 *Crews*, in which the technology and the task–tool relations are primary, and the sets of relations are expected to continue only for a “shift” of relatively brief duration.

These different forms of groups (all of which are plentiful in work organizations) have major implications for how, and how effectively, groups can accomplish their purposes, and for how vulnerable the group is to changes in different aspects of the group. Task forces are very vulnerable to changes in the assigned project; teams to changes in members; and crews to changes in technology.

The three kinds of groups or clubs that focus on fulfillment of member needs are:

- 4 *Economic clubs* which focus on the material resources and power/control needs that members can fulfill from group membership;
- 5 *Social clubs* which focus on the affiliative needs that members can fulfill from group membership; and
- 6 *Activity clubs* which focus on the activity/achievement needs that members can fulfill from group membership.

From the point of view of management, only groups that focus on completion of group projects have legitimate status, although sometimes management is aware of the existence of member-oriented groups (as in the informal groups of the Hawthorne studies). From the point of view of an individual member, membership in an organization and in groups within that organization must always, to some degree, entail expectations of need fulfillment. Thus, any given member may be associated with one or more of these types of “clubs,” as well as with one or another of the group project-oriented types of work groups listed above.

Of course, these types are prototypes or exemplars, not mutually exclusive categories. Any given group is likely to be a blend of all six types. But most groups are liable to be uneven mixes of these various aspects, hence more of some kinds than of others.

Coordination Processes

Coordination network

To pursue their functions effectively, groups must establish and enact a pattern of member–task–tool relations that we will call the coordination network. Note, however, that there are at least three meanings of coordination: (a) coordination of interests: alignment of intentions (hence of underlying values) among group members; (b) coordination of understandings: agreement about the meanings of information and events pertinent to the group; and (c) coordination of action: synchronization, in time, place, and content, of actions of group members. These three correspond, quite closely, to the three instrumental functions noted above: managing conflict and consensus, processing information, and motivation and regulation of member behavior.

The group as an operating system can be thought of as *the establishment, enactment, monitoring, and modification* of a pattern of relations among its constituent parts – its membership, projects, and technology. The overall pattern of member–task–tool relations (which Arrow, McGrath, & Berdahl call the coordination network) is composed of six

subnetworks: the set of member–member relations (the member or social network); the set of task–task relations (the task network); the set of tool–tool relations (the tool network); the set of member–task relations (division of labor or labor network); the set of member–tool relations (the role network); and the set of task–tool relations (the job network).

The set of member–member relations is the social network that connects group members. The set of task–task relations (the task network) is the recurring sequences of tasks used to produce the group’s product. For example, a team in a fast-food franchise might use a particular sequence of tasks for making each product. The tool–tool network is the interrelationships among the various tools or technologies used to produce the product. For example, a car manufacturer would use a set sequence of tools to assemble each product.

The set of member–task relations is the division of labor. The division of labor specifies which member does which tasks. The set of member–tool relations or the role network maps each member onto particular tools. For example, in an underground coal mine, a member with the role of the “shuttle car operator” operates the shuttle car that moves the coal that has been extracted from the coal face to the surface of the mine. Similarly, the member with the role of the “roof bolter” advances into the mine and uses a tool (the roof bolter) to prop up the roof and prevent its collapse. The set of task–tool relations maps each task onto particular tool(s). Returning to the coal mine example, the task of moving the coal is accomplished through the use of the shuttle car tool and the task of securing the roof is performed with the roof bolter tool.

Group performance is facilitated when each of these various subnetworks is internally compatible and compatible with the other networks. The task network should be a functional/instrumental set of relations by which the entire project can get done. At the same time, the member–task network should have all the tasks allocated to members with appropriate skills and tools (i.e., the member–task network should be compatible with the role network). The overall coordination network (the pattern of member–task–tool relations) should have tasks allocated to members who have appropriate skills and have access to appropriate tools. Groups vary in the extent to which they achieve compatibility of their networks. This variation contributes to differences in group performance outcomes.

Coordination as recurrent establish–enact–monitor–modify cycles

The coordination network gets partially established during group formation, then more fully articulated, enacted, monitored, and modified when the group is in its operations mode. For example, as the group gains experience, it learns who is good at what and how to assign tasks to take better advantage of each member’s skills. That enacting–monitoring–modifying (feedback) cycle is crucial. Out of this recurrent establish–enact–monitor–modify cycle come emergent or global properties of the group – things like cohesiveness, efficacy, task performance routines, and so on. These emergent patterns (global dynamics) shape the subsequent operation and development of the group.

Adaptation Processes

We use the idea of adaptation to refer to (reciprocal) changes in the group as a system, and in parts of its embedding contexts, that arise subsequent to actions and events in the embedding systems that have implications for the group. It carries the implication of “response to change.” It does not carry the implication of “effective response.”

Embedding contexts vary in richness (potential resources) and volatility (rate and temporal patterning of change). Changes vary in terms of their predictability and controllability. If predictable and controllable, they can be prevented, or induced (if favorable) at the time and circumstances of the group’s choosing. If they are unpredictable, and/or uncontrollable, they pose potential problems (or opportunities) for the group. There are many potential patterns of response to external events/actions, including accommodation; attempts to assimilate the change or attenuate its effects; and “doing nothing,” which is sometimes both a deliberate and a wise strategy. Changes often lead to unintended consequences. Moreover, there is often a non-proportional relation between amount and type of change event and the size and direction of change in the group. Sometimes big events yield small changes or none at all; sometimes small events yield big changes.

We assume that groups operate in what systems theorists call a “fitness landscape.” Some “locations” (i.e., states) of the group in relation to its external contexts are better for the group than others – they have better payoffs for the group and its members, and/or lower costs. For example, a group that is operating in a context in which its main output is scarce and highly valued is in a better “fitness” situation than is a group whose main product is plentiful and/or not much sought after. A group that depends on a particular resource is very vulnerable to variations in the environment that alter the availability of that resource. Such changes would be exemplified by a shift in the relation of the political regime that controls a resource such as crude oil, or adverse weather conditions that alter prospects for crop growth. Changes in the group’s relation to its external contexts are sometimes advantageous to the group and sometimes detrimental.

Types of adaptation and change

Adaptation may be *directed* or *undirected*. Undirected adaptation, like species evolution, is a cycle of variation (in structure, in behavior, or in the environment), selection, and stabilization (retention). Directed change is a cycle of information processing (about the system, its environment, and their relations), planning, choice, and self-regulation. There are barriers to both kinds of adaptation, including a fluctuating and unpredictable environment, and situations in which what is good for individuals or parts of a system is not correspondent with what is good for the system as a whole. For example, a manufacturing department may increase its efficiency by minimizing product changeovers that require retooling equipment and thereby reduce the amount of time the production line is operating. Maximizing the efficiency of the production department, however, may cost the organization customers who take their business elsewhere because they are dissatisfied with the organization’s responsiveness to their requests.

For undirected adaptation, barriers include conditions in which there is too little variation in the environment, or a too forgiving environment; conditions when selection is based on false association (superstitions, or spurious correlation); and conditions when it is difficult to maintain or stabilize a new “form.”

For directed adaptation, barriers include errors in understanding or prediction of the environment (i.e., errors in the group’s “mental model” of the fitness landscape); disagreement in the group regarding strategy or tactics (i.e., failure to achieve a coordination of interest, of understandings, and/or of action); inability to keep the group on track after setbacks; and “resistance” by entrenched routines or factions.

The latter suggests that internal factors also affect ability to adapt. Such internal factors include the state of the system at the time of the event (i.e., the group’s current structure and functioning), the “legacy of the past” (its history, including its entrenched routines and its record of past actions and effects), and the type of group it is. Different types of groups (e.g., teams, task forces, etc.) are vulnerable to different types of changes.

Adaptation is also affected by different developmental or “change motors” that may be operating in the group, and by the “shadow of the future.” Only certain types of groups (e.g., teams) fit the “life course” developmental change model that is the most prevalent one used in group research. Other types of groups such as crews, may fit a “crisis adaptation” model. Still others, such as task forces, may fit a “robust equilibrium” type model, or a “punctuated equilibrium” model as did Gersick’s (1988, 1989) groups.

Change events may come in various forms. First of all, changes may come from inside or outside the referent system. Outside changes may come in the form of intrusive or non-intrusive changes; that is, they may simply change the environment with no direct impact on the group (they change the “fitness landscape” that the group is operating in), or they may directly impinge on the group itself. Change events also differ in magnitude, and in valence.

Change events have temporal properties as well. They vary in abruptness of onset, in rate and frequency, and in temporal patterning. In regard to the latter: If there is a series of changes all of the same kind and in the same direction, that is a trend. Alternatively, a set of changes, collectively, can constitute a cycle. Or, a set of changes can vary in an apparently random way, constituting “fluctuation” in no apparent pattern. Changes also vary in uncertainty, predictability, and controllability.

Time-shifting responses

Groups often “time shift” their response to a given change. Such time shifts may place the response in any of five “temporal zones” with respect to the event itself (McGrath & Beehr, 1990). For negative events, those five zones can be labeled as different temporal forms of coping with potential stressors, as follows:

- 1 actions taken long before the change event are Preventive coping;
- 2 actions taken before the event are Anticipatory coping;
- 3 actions taken during the event are Dynamic coping;

- 4 actions taken after the event are Reactive coping; and
- 5 actions taken long after the event are Residual coping.

Preventive coping may try to prevent the event, but more often it is an attempt to mitigate its consequences. The building of a levee along a river bank does not prevent some later rise in the level of the water in the river, but rather prevents or attenuates the negative consequences of that high water for land beside the river. While for negative events these are reasonably called “forms of coping,” for positive events they reflect different timing in the pursuit of opportunities.

Forms of response to change events

From a systems-process point of view, there are four general forms of responses to such external system actions or events:

- 1 *Negative feedback loops.* These are system responses that attempt to attenuate or eliminate the impact of the change on the system. When done before the event, these would be “preemption.” During the event, they could be characterized as “buffering.” After the event they constitute “repair.”
- 2 *Positive feedback loops.* These are system responses that magnify the impact of the change on the system. This can be in the form of: (a) switching (before, during, or after) to alternative structures or functions; (b) increased disorder beyond what is directly produced by the change event itself and, if the increased disorder is extreme enough; (c) either “creative innovation” or “collapse.”
- 3 *No response.* The system may give no response to a given event: (a) because the group failed to note the event, or assumed it would not alter the group’s “fitness landscape”; or (b) because of some feature of the group’s history, its self-regulatory processes, and/or its routines that cannot be overcome. Alternatively, “no response” may be erroneously imputed to a system by an observer because the system’s response to the event is a time-shifted response, already anticipated or delayed, so that the response occurs before or long after the observer “looks” at the group and concludes “no response.”
- 4 *Co-evolution.* These are mutual reciprocal changes of the system and of its embedding contexts. But such co-evolution only applies for those parts of the environment that are interactive with the system, not the parts (such as climate or general economic conditions) that affect but are not affected by the system.

Concluding comments

Negative feedback dampens the impact of events. Positive feedback magnifies the impact. Time shifting obscures the impact. Hence, we should not expect to find the impact of events on the system to be isomorphic, in either valence or magnitude, with the valence and magnitude of the event.

Several “principles” of adaptation are implied in this discussion:

- 1 There is likely to be a non-proportionality of event and responses.
- 2 There often are unintended consequences.
- 3 Temporal displacement can obscure the fact and the nature of adaptive changes.

We should add a fourth, not particularly implied in the above but none the less likely:

- 4 There may be spontaneous innovation; that is, changes may occur that are not traceable to any particular event in the system’s embedding contexts; they may sometimes be attributable to the intentionality of the system or its embedded members.

Learning Processes

Group learning is the process through which members acquire, share, and combine knowledge into a collective product through experience of working together (Argote, Gruenfeld, & Naquin, in press). Group learning manifests itself through changes in knowledge and/or in performance. For example, as groups gain experience, they may acquire knowledge about the capabilities of group members, about how to sequence tasks, or about how to use tools. This knowledge may in turn improve their performance.

Learning implies the persistence of some change in the system or its behavior. To be a “persistent change,” some information or knowledge regarding that change must somehow be “located” somewhere in that system. In our terms, that implies a persistent alteration of some aspect of the coordination network, which embodies the “group-as-a-system-in-action.” As indicated earlier, the group’s coordination network can be viewed as composed of a set of six partially redundant subnetworks. At one level of consideration, there are networks of relations among the component parts of each of the group’s three kinds of constituent elements; that is, there are networks of relations among members, among tasks, and among tools. At another level, the coordination network involves subnetworks of relations among elements of different kinds; that is, a set of member–task relations or a division of labor, a set of member–tool relations or a role network, and a set of task–tool relations or a job network. For a change to be persistent (hence considered “learning”), the “new knowledge” that denotes that change must be embedded somewhere in one or more of those six subnetworks.

Repositories of knowledge

So we can view the knowledge that groups acquire as they gain experience as residing in various repositories or “retention bins” (Argote, 1999; Levitt & March, 1988; Walsh & Ungson, 1991). That knowledge can be embedded in individual group members, the group’s tasks, its tools, the group’s member–tool network, its member–task network, or

its task–tool network. For example, as groups acquire experience, *individual members* may learn new skills and become more proficient at their particular tasks. This knowledge is embedded in individual group members. As groups gain experience, they may also modify the *tasks* that constitute the project. For example, they may discover better ways to sequence tasks or to layout the production process. Thus, some of the knowledge that groups acquire with experience is embedded in the task network. As groups gain experience, they may also modify their *tools* and how they use them, and thereby embed knowledge in the technology. For example, a car manufacturer may modify the software in its paint shop to achieve the desired colors on cars or a pizza maker may develop a tool for achieving an even distribution of cheese on pies.

As groups gain experience, the *member–task* and *member–tool* relations – the division of labor and role networks – also change. Groups acquire knowledge about who is good at what (Liang, Moreland, & Argote, 1995) and assign tasks to take advantage of each member’s capabilities. This knowledge about who is good at what becomes embedded in the *member–task* network and/or in the *member–tool* network. The group acquires information about who is proficient at using which tools and assigns tasks and roles accordingly. Similarly, knowledge may be embedded in the *task–tool* relations or the job network. Groups acquire information about which tasks are best performed with which tools and how to structure the relationships between tools and tasks better, and embody that knowledge in their *task–tool* networks.

Of course, the three kinds of elements are quite different when viewed as potential “repositories of knowledge.” The idea of members as repositories of knowledge is a familiar one, and such knowledge repositories are subject to an array of strengths and weaknesses of humans as cognitive and motivational systems – learning rate, forgetting, fatigue, positive and negative transfer, attention and motivational fluctuations, and so on. “Tools” as a location for the deposit of knowledge is a less familiar idea. Considering that “tools,” as used here, includes both hardware and software, the embedding of new knowledge in tools includes both the idea of a change in hardware (such as modification of the design of a wrench) or in software (such as change in the software that runs the “paint shop” of a plant). The idea of tasks as a location for new knowledge is also somewhat novel. Since projects are the focused embodiment of intentions, and tasks are proper parts of projects, tasks are therefore “subintentions.” Learning a new way to carry out a project often entails the “division” of the overall project into a new set of tasks – new either in that some of the tasks are different than those into which the project was divided before, or in the sense that some of the tasks are clustered or sequenced in new ways. If we think of the task network as a template for the activities needed to complete a project, then when there is a change either in the parts of that template or the patterning of those parts, that can be regarded as a “knowledge repository” of what has been learned.

Learning that involves the embedding of knowledge in these different subnetworks is subject to different strengths and vulnerabilities. Changes in the tool network and the task network by definition involve explicit knowledge, and are accessible to all members of the group. Changes in members, however, may involve either explicit or tacit knowledge, and may be available only to individual members.

The situation with regard to the three between-element networks is even more complicated. Embedding of knowledge regarding changes involving the member–task

network (i.e., the division of labor) impacts both those members and those tasks. Similarly, embedding of knowledge regarding changes in the member–tool network impacts both members and tools, and embedding of knowledge regarding changes in the task–tool network impacts both tasks and tools. So knowledge that is embedded in any of these between-element subnetworks is liable to have the vulnerabilities and limitations of both kinds of elements. For example, any given piece of knowledge regarding the division of labor (member–task network) must be accessible to many or all members, not just to the one(s) directly involved in those tasks. Similarly, knowledge regarding changes in the role network must be accessible to both those in the relevant roles and those affected by that role performance.

Ultimately, of course, while tasks can “contain” or reflect new knowledge (new tasks to be done and/or new sequencing of tasks), and tools can “contain” or reflect new knowledge (new physical features and/or modified procedures), only individual humans – members – can “know” something in our usual meaning of that verb. But while “know” as a verb refers to a distinctly human characteristic, knowledge as a noun refers to “repositories,” tangible or intangible, that are potentially accessible not just to a single individual but to many.

Consequences of where knowledge is embedded

Embedding group knowledge in these various repositories has implications for the persistence and accessibility of the knowledge over time, for the group’s ability to transfer the knowledge to new tasks or settings, and for the performance of the group.

Individuals. Embedding knowledge in individual members has both positive and negative consequences for group outcomes. On the positive side, individual members are particularly well suited for storing and transferring tacit knowledge, knowledge that is not easily articulated (Polanyi, 1966). Individuals can apply their tacit knowledge to a new task or setting without converting the tacit knowledge to explicit knowledge. The ability of individual members to transfer tacit knowledge was demonstrated in a series of experiments showing that individuals were able to transfer tacit knowledge acquired on one task to another, even though individuals were not able to articulate their knowledge or why their performance improved with experience (Berry & Broadbent, 1984, 1987). Alternatively, tacit knowledge can be converted to explicit knowledge (Nonaka, 1991). This conversion typically involves a period of apprenticeship in which another individual observes the group member with the tacit expertise and converts his or her tacit knowledge to explicit knowledge that others can access.

A potential negative performance consequence of embedding knowledge in individual members is the vulnerability of this knowledge to member turnover. When individual members leave, they take their knowledge with them. The turnover of individual members has been found to be particularly harmful to group performance when the departing members are high performers, the replacements are less experienced or less competent than departing members, the group lacks formal structure, opportunities for innovation

are low, and the group has not had previous experience with turnover (see Argote, 1999, for a review).

Another challenge of embedding knowledge in individual members is that it may decay faster than knowledge embedded in other repositories. Research has found that knowledge embedded in groups (hence, in some subnetwork) is more stable than knowledge embedded in individual members, even when there is no member turnover. Weldon and Bellinger (1997) found that groups exhibited less forgetting and more consistency than individuals. Knowledge embedded in tools, as in redesigned hardware, also is available even if there is member turnover.

Another challenge associated with embedding knowledge in individual members is that individuals may not share their knowledge. This tendency is particularly pronounced when a group member is the sole possessor of a particular piece of task-relevant information. A substantial body of research suggests that group members do not share information they uniquely hold (see Wittembaum & Stasser, 1996, for a review). Several explanations have been offered for why groups focus on ideas that members already hold in common, rather than discuss unshared ideas that are uniquely held by individual members. One explanation focuses on the “sampling advantage” of shared information: since more members possess the shared information, it is more likely to be mentioned in group discussion (Stasser & Titus, 1985). Another explanation focuses on the influence of shared information on members’ pre-discussion preferences rather than its effect on what is mentioned during group discussion (Gigone & Hastie, 1993). Other explanations have emphasized political concerns and noted that individual members may hoard knowledge they uniquely possess to protect the basis of their power and influence (Engeström, Brown, Engeström, & Korstinen, 1990).

Thus, individual members provide both a sensitive and a vulnerable medium for storing and transferring knowledge. Individuals are capable of capturing tacit knowledge and subtle understanding that other repositories may miss. Individuals can transfer their knowledge, including their tacit knowledge, to new tasks or settings and adapt it appropriately. On the other hand, knowledge embedded in individual members is particularly vulnerable to turnover and to decay (even when there is no turnover). Further, individuals who uniquely possess key information may not be motivated to share the information.

Tools. Tools or technology are effective repositories for retaining explicit knowledge. Knowledge embedded in tools appears less subject to decay or depreciation than knowledge embedded in other repositories. High-technology organizations such as highly automated truck assembly plants have been found to exhibit less “forgetting” or knowledge decay than low technology organizations such as fast-food franchises (Argote, 1999). A significant component of the knowledge at these highly automated organizations is embedded in their tools and technology.

Knowledge embedded in tools or technology also transfers readily to other groups. A long line of literature on technology transfer indicates that embedding knowledge in tools or technology and transferring it to another group can result in substantial savings for the recipient group (Gallbraith, 1990). Similarly, a study of within-plant knowledge transfer across shifts in a manufacturing plant found that embedding knowledge in technol-

ogy was an effective way to transfer knowledge from one shift to another (Epple, Argote, & Murphy, 1996).

Knowledge embedded in tools may be more resistant to change than knowledge embedded in other repositories. An example of the rigidity associated with embedding knowledge in tools or technology can be found in Ford's production of the Model T. According to Abernathy and Wayne (1974), Ford's almost exclusive embedding of knowledge in "hard" automation (i.e., tools and technology) made it more difficult for Ford to adapt to changing customer preferences and offer a more varied product line.

Thus, embedding knowledge in tools and technology has many advantages from the perspective of minimizing knowledge decay and facilitating knowledge transfer across groups. Knowledge embedded in tools decays less over time and transfers more readily to other units than knowledge embedded in other repositories. Knowledge embedded in technology, however, is more rigid than knowledge embedded in "softer" repositories and more difficult to change. Embedding knowledge almost exclusively in technology can hamper an organization's ability to adapt.

Tasks. Knowledge can also be embedded in the task network – in the set of tasks and the sequencing or interrelations among them. The task network has been referred to by other writers as routines, programs, or repetitive patterns of tasks or activities (e.g., see Cyert & March, 1963; Gersick & Hackman, 1990; Nelson & Winter, 1982).

Groups embed a significant component of the knowledge they acquire with experience in their task network or system of routines. For example, an automobile manufacturing plant embedded a new method for painting two-tone trucks that required fewer steps and less material in a task network that all workers used (Argote, 1999). Similarly, a fast-food franchise embedded a new procedure for preparing a product that improved its quality in the network of tasks used by employees of the corporation at locations all over the world (Darr, Argote, & Epple, 1995).

Embedding knowledge in the task network has many of the same advantages and disadvantages of embedding knowledge in the tool network – but to a lesser extent. Embedding knowledge in the task network is an effective way to promote knowledge persistence and minimize knowledge decay. Cohen and Bacdayan (1994) found that interruptions did not slow down the performance of social systems that had evolved stable task networks. Embedding knowledge in task networks also makes it more resistant to employee turnover since the knowledge no longer depends on particular individuals but rather is codified in a task network that all individuals can use.

Embedding knowledge in a task network also facilitates knowledge transfer to other groups. A study of knowledge transfer in fast-food franchises found that knowledge embedded in task networks transferred readily outside the store of origin. By contrast, knowledge embedded in individual members remained at the store of origin (Argote & Darr, in press). In order to be embedded in a task network, knowledge must be codified. This codification makes it accessible to others and thereby facilitates knowledge transfer.

A disadvantage of relying on knowledge embedded in the task network is that a particular task network may be invoked inappropriately when it does not fit the situation. In order to realize the full potential of task networks, groups need to specify the condi-

tions under which various task networks are appropriate and have mechanisms for switching from one task network to another or for generating new task networks when initially novel situations become recurrent (March & Simon, 1958).

In short, the task network is a mechanism for getting work done efficiently. It promotes knowledge persistence over time and facilitates knowledge transfer. If performance is to improve, however, the task network must be invoked thoughtfully to insure that it is appropriate to the situation.

Cross-element subnetworks. Knowledge embedded in the labor, role, and job networks tend to blend the strengths and vulnerabilities of the two kinds of elements that comprise them. For example, the labor network has features that combine those of knowledge embedded in the individual members and knowledge embedded in tasks. As groups gain experience in production, an important source of the productivity gains they typically experience is learning who in the group is good at what and assigning tasks accordingly (Argote, 1999). This knowledge of who knows what is embedded in the member–task network and in the member–tool network. Studies have documented the benefits of groups knowing who knows what for subsequent group performance (Liang, Moreland, & Argote, 1995; Moreland & Myakovsky, 1998). This knowledge of who knows what has been termed a “transactive memory” system (Wegner, 1986). These memory systems have been found to facilitate coordination and group performance. But member–task and member–tool networks depend to some extent on individual members. Thus, the systems are vulnerable to member turnover (Moreland, Argote, & Krishnan, 1996). When key individuals depart, the member–task network may need to be realigned, if those individuals have idiosyncratic skills or knowledge not easily replaced.

Since individual members are involved in the labor and role networks, those repositories are more flexible and afford more opportunities to innovate than knowledge embedded solely in “hard” form in tasks or tools. Since the member–task and member–tool networks are tailored to take advantage of individual member skills, the networks are somewhat vulnerable to turnover.

The task–tool network is the most rigid of the various repositories. Knowledge embedded in the task–tool network exhibits the most persistence over time and the most transfer – at least to very similar situations. Knowledge embedded in the task–tool network is not affected by member turnover or members’ choices about participation. Although knowledge embedded in the task–tool network is not subject to the vagaries of individual member participation, it suffers from the loss of flexibility and creativity that individual members can provide. Groups that embed large amounts of knowledge in task–tool networks are less adaptable than those relying more on knowledge repositories involving individual members.

Temporal and Contextual Issues

As we noted earlier, some of the major limitations of earlier work on groups, by scholars with both basic and applied interests, is that groups have been studied as relatively static

entities and in isolation from the organizational contexts in which they are embedded. We want to reemphasize these issues by discussing them briefly in this concluding section.

Temporal issues

The one-hour “lifetimes” of laboratory groups in most experiments is in stark contrast to the extended, and often complicated, lifetimes of actual groups in actual work organizations. Similarly, the tendency of both laboratory and field studies to assess variables at one or a very few points in time, and to treat causal processes as one-shot occurrences seriously undervalues the dynamic nature of causal processes in groups. This neglect of temporal processes in groups has occurred at each of three levels of consideration, which are discussed below. That neglect, in turn, limits our ability to understand, much less to predict, the behavior of groups in organizations.

Dynamic processes. The first level of consideration has to do with the dynamic nature of processes within groups. All of the processes we have discussed thus far in the chapter – in formation, coordination, adaptation, and learning – take place more or less continuously over time. They cannot be assessed, appropriately, via “input–output” designs, for several reasons (some of which were suggested in earlier sections). First, there is often a disproportionality between the magnitude of “cause” and of “effect.” Because system responses to change can be dampened by negative feedback loops, amplified by positive feedback loops, or show no (apparent) response, some strong causes yield weak effects, and vice versa. Moreover, in human systems in which intentionality, perception, and learning play a part, “effects” do not have to follow immediately after “causes.” Sometimes systems react to anticipated events before the event occurs, sometimes reactions don’t occur until much later. Furthermore, systems tend to reflect complex interdependencies among many variables – including recursive and nonmonotonic relations – rather than simple, univariate, directional ones. Various system processes reflect different temporal “cadences” and forms; some are self-limiting cycles, some are nonlinear though monotonic, some have the potential for more than one pattern (as in “catastrophic bifurcations” of the type that are studied in “chaos theory”). All of these complexities make it very likely that any given group will show complex dynamic processes, even in relatively short periods of time, that are unlikely to be captured, much less clarified, in simple “input–output” designs.

Group development. A second level of temporal consideration has to do with the relatively long-run dynamics of the group’s own development. Even assuming a constant set of members, projects, and technology, the very nature of the group as an intact system evolves continuously over time. When a group has been in business for a year, even with “constant” constituent elements (i.e., members, projects, technology), its members are different – qua individuals, qua members, and qua relationships – than they were at the outset. They are older, probably wiser, have different capabilities, experience, and needs. The tasks and task network, and the tools and tool network, as well as the labor and role and job networks, also have evolved. Even though it has the same constituent parts nom-

inally, it is not the “same” group. (The words of Heraclitus, the Greek philosopher – that you can’t step in the “same” river twice – are apt here.)

Change over time. At a third level of consideration, we must recognize that the elements of the group – its members, its projects, its technology – seldom do stay “constant” over long periods of the group’s life. Members change, either voluntarily or otherwise. So do the group’s projects (and, of course, the members’ needs); and so do the total collection of tools, rules, and procedures with which the group can work. In fact, since many formally designated groups within work organizations (e.g., the U.S. Supreme Court, the New York Yankees team, the Board of Trustees of a university) exist beyond ordinary life-spans or career-spans, to some degree member change is inevitable. Moreover, there is likely to be substantial change in features of the group’s embedding contexts – its organizational setting, that organization’s markets and resources and alternatives, and so on – that impinge on the group in the mutual adaptation processes discussed earlier in this chapter. So temporal processes are reflected, as well, in the adaptation and change processes within which the group is embedded.

Contextual issues

Another major limitation of research on groups is its neglect of the context in which groups function. In the prototypical laboratory study, groups are created and studied in isolation. The majority of field studies also focus on the internal structure and processes of groups – their composition, communication, leadership, and so on – with little regard to the external processes of groups and their relationships with their embedding contexts.

Yet groups in organizations are intricately embedded in larger organizational and cultural contexts. These groups depend on the embedding organizational context for acquiring members, tasks, and technology. Further, groups acquire knowledge from the embedding context that may lead them to modify their members, tasks, or technology and the subnetworks of relations among them.

The neglect of the relations between groups and their embedding contexts limits our ability to understand and predict the behavior of groups in organizations. How groups manage their relationships with their embedding contexts, and share knowledge with components of the context, is critical to their success. For example, a study of knowledge transfer across fast-food stores found that the ability of a store to “learn” from or benefit from the experience of other stores contributed significantly to a focal store’s performance (Darr, Argote, & Epple, 1995). Focusing only on the internal processes of each store would have neglected an important contribution to their performance – their ability to transfer knowledge from other stores in the embedding context.

Contextual effects on constituent elements of groups. As was the case for temporal issues, as previously discussed, the neglect of contextual factors limits our understanding of groups on several levels. At one level of consideration, the elements of the group – its members, its tasks, its technology – are affected by the group’s embedding organizational context. Members are affected by the training, socialization, reward practices, and so on of the

parent organization and the broader social/political/economic context. The group's tasks are affected by the goals, plans, and purposes of the parent organization. Further, the group's technology may be circumscribed by the parent firm.

Contextual effects on core processes. The second level of consideration of context has to do with the core processes themselves. Most of the processes we have discussed in this chapter – formation, coordination, adaptation, learning – are affected by the organization's context. Groups depend on the organizational context for acquiring members, tasks, or technology in their formation process. The interplay between the group and its embedding context is at the core of the adaptation process. Not only do groups learn from and modify themselves on the basis of their own direct experience, they also learn from the experience of other groups in their embedding context. For example, an innovation made by one group in an organization may transfer to another. Thus, the group's relationship with its embedding context affects its learning processes.

Effects of dynamic features of the organizational context. At still another level, groups affect and are affected by dynamic features of the group's embedding contexts. Not only does the context have a direct effect on the elements and processes of groups, groups both anticipate and respond to events and actions external to the group that appear to have implications for it. As noted earlier in this chapter, in our discussion of adaptation, members anticipate events in the context and adjust to actual and anticipated external events in ways that affect both the group and the embedding context.

Concluding Comments

We have ended this chapter as we began it – emphasizing the importance of viewing groups as complex, adaptive, dynamic systems. Groups in work organizations reflect the effects of myriad temporal processes that operate: (a) in the short-term process dynamics of complex systems; (b) in the longer term developmental dynamics of such complex systems; and (c) in the dynamics of change and of the system's responses to it. Groups in work organizations also reflect effects of a variety of contextual processes that operate: (a) directly on their fundamental elements; (b) directly on their core processes; and (c) indirectly by altering their relations with embedding contexts. In our view, major advances in our understanding of groups in the future will require a much fuller appreciation of how temporal and contextual factors affect and are affected by the group's elements, core processes, developmental patterns, and the overall dynamics of the embedding contexts than our past research preferences have allowed. This, in turn, will require group researchers – from both basic and applied disciplines – to modify and expand the methodological and conceptual preferences and practices that have underpinned the work in this field for nearly a century. We hope the conceptual framework offered here can provide a useful template for concocting the “new look” in group theory that will be needed to launch the next century of scholarly efforts to understand groups in organizations.

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CHAPTER TWENTY-SIX

Therapeutic Groups

Donelson R. Forsyth

Throughout history people have used groups, and the powerful interpersonal dynamics that occur in them, to promote adjustment and beneficial change. Small tribal groups have, for eons, been a source of social and material support for members. The spiritual rites of most religions were conducted in small groups, as were most educational activities. So the progression from individualistic forms of psychological treatments to group-centered approaches is a natural one. As practitioners developed their methods of psychotherapeutic methods in the early part of the 20th century, some preferred to meet with their patients in groups where members discussed their illnesses. In time, these early group treatments stimulated a concerted and more systematic application of groups to help people improve their well-being.

This chapter examines the nature of psychotherapeutic groups as groups. Although treatment groups have many unique features, they are groups none the less. Even though members may display behavioral perturbations that severely disrupt routine group processes and their psychological disturbances may prevent the kinds of interpersonal exchanges characteristic of nontherapeutic groups, these groups form, develop, work, and disband much like groups in other settings. This review, after offering a three-part classification scheme for differentiating the major types of therapeutic groups, selectively examines topics that dominated researchers' efforts to understand therapeutic groups: Group development, leadership, motives, and therapeutic factors.

Types of Therapeutic Groups

The three most typical types of therapeutic groups in use today – the therapy group, the interpersonal learning group, and the self-help group – gained acceptance as therapeutic procedures between 1920 and 1950. Psychotherapy itself emerged as a means of helping people deal with mental and emotional problems during this period and, in some cases,

physicians, psychiatrists, psychologists, and other mental health practitioners conducted their therapeutic sessions in group settings. Many practitioners preferred individualized approaches and turned to groups only when forced to by limited time and resources, but this view gave way as groups emerged as appropriate treatments for a variety of problems, including addiction, thought disorders, depression, eating disorders, and personality disorders (Kaplan & Sadock, 1993; Long, 1988).

Psychotherapy groups

Most people trace group therapy back to 1905 and a physician named Pratt who arranged for patients to gather in groups so that he could give them instruction on personal hygiene. He originally used groups to save time, but he quickly recognized that group-level processes were contributing to the success of his treatments. The method, however, did not gain widespread acceptance until the mid-1940s as publications with such titles as “Group psychotherapy: A study of its application” (Wender, 1940), “The psychoanalysis of groups” (Wolf, 1949), “Results and problems of group psychotherapy in severe neurosis” (Schilder, 1939), and “Group activities in a children’s ward as methods of psychotherapy” (Bender, 1937) appeared in the literature. Therapists who traditionally used only dyadic, one-on-one methods added group sessions, either supplementing or completely replacing their individual sessions.

Group psychotherapists are usually credentialed mental health professionals and their patients tend to be suffering from diagnosed clinical conditions. The methods used by group psychotherapists are as varied as individual approaches to therapy, for therapists draw on psychoanalysis, psychodrama, systems-theory, object relations, existentialism, Gestalt, humanistic, cognitive-behavioral techniques, and other methods in designing their interventions (Brabender & Fallon, 1993; Dies, 1992; Kaplan & Sadock, 1993; Spira, 1997). Psychoanalytically oriented therapists, for example, exploit transference mechanisms to promote change in members. The therapist becomes the central authority in such groups, and usually relies on the traditional tools of the analyst as he or she directs the session and summarizes the group’s efforts (Day, 1981; Rutan & Stone, 1993). Whereas some psychoanalytically oriented therapists stress the importance of the individual in the group, rather than the group itself (e.g., Kutash & Wolf, 1993), others integrate the treatment of the individual with the analysis of the group itself. These so-called group-as-a-whole approaches capitalize on group tensions to promote growth and development (Bion, 1961; Foulkes, 1964).

Cognitive-behavioral and behavioral approaches, in contrast, focus more on explicit, observable cognitions and behaviors, such as social or relationship skills (Flowers, 1979; Hollander & Kazaoka, 1988; Rose, 1993). Behavioral therapists are more directive, the group’s goals are more clearly identified, and the interaction among members may be structured through role-playing activities and specific exercises.

Yalom’s (1995) widely used interpersonal group psychotherapy, more than psychoanalytic or cognitive-behavioral methods, exploits the group’s interpersonal processes to achieve change. Yalom assumes that most problems, such as depression, anxiety, and personality disorders, can be traced back to social sources, so he uses the group as a “social

microcosm” where members respond to one another in ways that are characteristic of their interpersonal tendencies outside of the group. Members do not discuss problems they are facing at home or work, but instead focus on interpersonal experiences within the group: The *here and now* rather than the *then and there*. Yalom’s interpersonal model is unique in its emphasis on identifying, and exploiting, curative factors in groups.

Interpersonal learning groups

Most people who join interpersonal learning groups do so voluntarily to gain insight into themselves, to improve their interpersonal skills, or to enhance the quality of their emotional experiences. The training group, or T group, assembled in 1946 by Lewin, Benne, and their colleagues, is the prototype of such groups. Lewin and his colleagues used unstructured group discussions to help trainees improve their interpersonal skills, but when the trainees were given permission to join in the post-training review sessions Lewin recognized the value of interpersonal feedback and sharing perceptions of the group situation (Bradford, Gibb, & Benne, 1964). Lewin shifted the sessions to include more process analysis and feedback, and participants reported gains in self-insight. These T groups became the basis of the curriculum of the National Training Laboratory (NTL), which has trained thousands of educators, executives, and leaders through group exercises that stress communication and interpersonal skills (Bednar & Kaul, 1979; Kaplan, 1979). As Marrow (1964, p. 25) explains, T groups are a “special environment in which they [participants] learn new things about themselves. . . . It is a kind of emotional re-education.”

This early innovation formed the basis for at least three types of small-group learning experiences. During the 1950s and 1960s a version of the T group emerged that focused explicitly on enhancing positive emotions and the quality of one’s relations. As the purpose of the training shifted from learning about group processes to enhancing spontaneity, personal growth, and sensitivity to others, a new label developed for such groups: Sensitivity-training, or encounters (Johnson, 1988; Lieberman, 1994). These groups lost much of their popularity in the 1980s, but in recent years they have changed into a second form: Large group awareness training (LGAT). EST, FORUM, and Lifespring are all examples of LGATs, for members seek to improve their overall level of satisfaction and interpersonal relations by carrying out such experiential exercises as role-playing, group singing and chanting, and guided group interaction. Lieberman (1994) suggests that at least 1.3 million Americans have taken part in LGAT sessions.

Workshops, or structured training groups, are also based on the T-group concept of interpersonal learning, but they regulate the learning experience by using didactic presentations, guided group discussion, and exercises that help trainees practice certain skills. Although these interventions often focus on management and professional skills, as telegraphed by such titles as *How to Manage People Effectively*, *Stress-Management Seminar*, or *Negotiate Your Way to Success*, workshops are also frequently used to promote adjustment. Sherill, Frank, Geary, and Stack (1997), for example, used psychoeducational workshops to provide information and support to families of elderly patients who were suffering from depression. The workshops were primarily informational rather than supportive, but attendance was associated with reduced recidivism in an ongoing treatment program. Similarly, Beem, Eurelings-Bontekoe, Cleiren, and

Garszen (1998) recommend using workshops with individual and group counseling to help individuals suffering from an interpersonal loss. Their workshops provided information about the bereavement process and sources of support and other community resources. Gray, Verdieck, Smith, and Freed (1997) developed and evaluated the effectiveness of court-mandated workshops for divorcing families, and concluded that attendance was associated with reduced parental conflict, both legal and interpersonal, and improved adjustment for children.

Self-help groups

Self-help groups (SHGs) are voluntary associations of individuals who share a common problem (see Hollingshead, this volume, chapter 23, for discussion of virtual self-help groups). SHGs exist for nearly every major medical, psychological, or stress-related problem. Groups exist for people who are suffering from such physical illnesses as asthma, heart disease, cancer, and AIDS. SHGs also exist for people who provide care for those suffering from chronic diseases and disabilities, and for individuals striving to overcome addictions to alcohol and other substances. Other groups focus on weight loss, domestic problems, time and money management, and personality disorders. Such groups are growing in terms of numbers and members, with perhaps as many as 8 million people in the United States alone belonging to such groups (Christensen & Jacobson, 1994; Goodman & Jacobs, 1994; Jacobs & Goodman, 1989). Alcoholics Anonymous, for example, is one of the most widely used methods for treating addictions (Miller, 1995). Jacobs and Goodman explain the rise of SHGs in terms of the erosion of the family, increase in the number of people living with significant diseases, consumers' skepticism of care-providers and mental health services, and increased recognition in the value of interpersonal remedies.

Self-help groups are usually self-governing, with members rather than experts or mental health professionals determining activities. They are also egalitarian groups, with norms that insist that all members be treated fairly. The members, although often very different in terms of backgrounds, ages, and educational level, all face a common predicament, problem, or concern. Hence, as Jacobs and Goodman (1989, p. 537) note, the members are "psychologically bonded by the compelling similarity of member concerns." These groups all stress the importance of reciprocal helping, for members are supposed to both give help to others as well as receive it from others. SHGs usually charge little in the way of fees, and they form because the members' needs are not being met by existing educational, social, or health agencies.

Group Development

Therapeutic groups, like all groups, change over time (see also Levine, Moreland, & Choi, this volume, chapter 4; Worchel & Coutant, this volume, chapter 19). When the group is first convened members are reluctant to disclose personal information, and the leader is generally regarded as the sole source of therapeutic information and expertise. Over

time the group interaction becomes more structured, as regularities or response patterning in the interactions of members become more predictable. In many cases this regularity is disrupted by conflict in the group, but in successful groups this conflict is resolved as the members develop a working alliance among themselves.

Bennis and Shepard's model

Bennis and Shepard (1956) were among the first theorists to describe the stage-like nature of this development. They based their theory on observations of groups at the NTL in the 1950s. These groups included a leader, but that individual did not actively structure the group interaction. Bennis and Shepard noted that initially the groups were concerned with structure, order, and authority relations (dependence), but over time the focus shifted to questions of interpersonal relations (interdependence). They also noted subphases within these two general stages. When the group first forms members look to the leader for guidance, and during this dependence–submission subphase discussion focuses on personal concerns of group members rather than the group's goals. When the leader does not provide structure, a counterdependence phase begins marked by conflict between the group and the leader. This phase ends when the group members take responsibility for the group's activities, redefine the role of the leader, and begin to work in earnest on the goals the group identifies in the resolution subphase. Those groups that move through this subphase then shift their attention to interpersonal relations and the next phase begins with its three subphases: Enchantment-flight, disenchantment-fight, and consensual validation. The enchantment-flight subphase is marked by extreme group cohesion, and discussions are characterized by laughter, joking, humor, and having fun. This cohesion dissolves during the disenchantment-fight stage, when individual members begin to express their unwillingness to go along with the group's interpretations, coalitions form, and the members disparage the group through "absenteeism, tardiness, balkiness in initiating total group interaction, frequent statements concerning worthlessness of group, denial of importance of the group" (Bennis, 1964, p. 267). Groups that make their way to the final subphase establish a balance between the emotional demands of the group, and the value of using the group to reach personal and group goals. Winter (1976), Mabry (1975), and Davies and Kuypers (1985) offer evidence that lends general support to the model, with Burnand (1990) suggesting that the subphases correspond to six basic human goals: Certainty, freedom, reward, other's good state, unity, and fairness.

Tuckman's five-stage model

Tuckman (1965), after reviewing both theory and data collected in studies of therapeutic and nontherapeutic groups, offered a model of group development that stresses four basic stages: Forming, storming, norming, and performing. During the forming stage the group members must become oriented toward one another. Next, members experience conflict (storming), often because members challenge the authority of the leader. In the norming phase norms and roles develop that regulate behavior, and the group achieves

greater unity. In the performing phase the group reaches a point at which it can perform as a unit to achieve desired goals. Tuckman later added a fifth stage, the adjourning stage, when the group deals with issues of independence and closure (Tuckman & Jensen, 1977).

Research evidence is generally consistent with the Tuckman (1965) model. Hill and Gruner (1973), for example, observed and coded the behaviors displayed by adolescents in a program of behavioral change. These groups did not immediately start to work on self-development issues, nor did the group members try to help one another. Rather, the groups first moved through orientation, conflict, and cohesion-building stages before they began to make therapeutic progress (Hill & Gruner, 1973). Stiles, Tupler, and Carpenter (1982) asked members of a sensitivity-training group to rate each session on a series of adjective pairs such as good/bad, labored/easy, and uncertain/definite. These ratings, when examined by the researchers, followed the general pattern suggested by Tuckman's stage theory: A period of mild tension followed by increased conflict that was resolved by the ninth session. Group members rated the next four sessions as smooth and comfortable, but as the group entered the work phase (sessions 13–15) the positive ratings dropped slightly, whereas ratings of the potency of the meetings increased (Stiles, Tupler, & Carpenter, 1982). Maples (1988) coded the journals of 230 members of psychoeducational groups. The forming stage was characterized by courtesy, confusion, caution, and commonality, the group was rife with controversy and confrontation during the storming stage, whereas cooperation, collaboration, cohesion, and commitment characterized the norming stage. During the performing phase members reported feeling challenged to work hard by the group, whereas communication and increased consensus marked the group's final stage.

Studies of process structuring that occur later in the group's development also support the Tuckman model (Kivlighan, McGovern, & Corazzini, 1984; Warren & Rice, 1972). Kivlighan and his colleagues, for example, tested the hypothesis that interventions that are timed to match the developmental needs of the group will lead to more positive outcomes than interventions that are not appropriate given the "maturity" of the group. They gave group members written handouts pertaining to either anger or intimacy in group therapy prior to either the fourth group session or the ninth group session. The information dealing with anger clarified the value of anger in therapy by providing a justification for anger as a natural part of group participation and suggestions for communicating anger. In contrast, the information dealing with intimacy clarified the value of intimacy in groups, and provided suggestions for the appropriate expression of intimacy toward others. As anticipated, when the interventions were matched to the most appropriate developmental stage – for example, group members received the anger information during the storming phase (session four) or the intimacy information during the norming phase (session nine) – rather than mismatched, subjects displayed more comfort in dealing with intimacy, more appropriate expressions of intimacy and anger, fewer inappropriate expressions of intimacy, and more congruence between self-ratings and other ratings of interpersonal style.

The Tuckman (1965) model is also generally consistent with the Group Development Questionnaire (GDQ) developed by Wheelan (1994; Wheelan, Buzaglo, & Tsumura, 1998; Wheelan & Hochberger, 1996). Her instrument, which is available in English, Spanish, and Japanese, includes items that pertain to dependency/inclusion (forming),

counterdependency/fight (storming), trust/structure (norming), and work and productivity (performing). Example items for each stage are, respectively, “Members tend to go along with whatever the leader suggests,” “People seem to have very different views about how things should be done in this group,” “The group is spending its time planning how it will get its work done,” and “The group gets, gives, and uses feedback about its effectiveness and productivity” (Wheelan, Murphy, Tsumura, & Kline, 1998, p. 379).

MacKenzie’s four-stage model

MacKenzie (1994, 1997) collapses the norming and performing stages identified by Tuckman (1965). Therapeutic groups – with their focus on interpersonal processes, growth, adjustment, and self-exploration – rarely concentrate wholly on therapeutic topics to the exclusion of process-related topics, therefore the period of normative development and focus on individual adjustment blend together. MacKenzie’s stage 1, engagement, occurs gradually as participation in “the developing group system is accompanied by an early sense of well-being at finding that one is accepted and understood, which has the effect of encouraging greater self-disclosure” (p. 279). Stage 2, differentiation, corresponds to Tuckman’s (1965) storming phase. Members must develop “patterns for conflict resolution and tolerance of a negative emotional atmosphere” (p. 279). Most outpatient groups meeting weekly need four to eight sessions to move through these two stages to the interpersonal work stage. During this stage the group is “able to address individual problematic matters in a more vigorous manner. The focus tends to shift to greater introspection and personal challenge” (p. 279). Most groups become more cohesive during this period, and the theme of individual autonomy and group dependence tends to occupy many members’ minds. In time, the group reaches stage 4, termination.

MacKenzie’s model has stimulated more research than other approaches, in part because of MacKenzie’s development of the Group Climate Questionnaire, which assesses three aspects of groups that vary with group development: engaged (a positive working alliance in the group), conflict (interpersonal tensions), and avoiding (denial of personal responsibility for the group’s outcomes). MacKenzie (1997) finds that scores on the engaged scale increase initially, but then drop during the differentiation phase. They then rise again until the termination phase, although drops occur when the group works through difficult material. The avoiding scale scores decrease over the life of the group, whereas conflict scores peak during the differentiation stage. Kivlighan and Lilly (1997) confirmed these trends, in part, but found that in the groups they studied – where members were relatively well adjusted – the engaged scores did not build during the early group meetings, but instead started out high and remained elevated until the differentiation stage.

Issues and implications

Group development can, of course, sometimes take a course that differs from that suggested by Bennis and Shepard (1956), Tuckman (1964), and MacKenzie (1997). Inter-

personal exploration is often a prerequisite for other therapeutic outcomes, and cohesion and conflict often precede effective performance, but this pattern is not universal. Some groups manage to avoid particular stages, others move through the stages but in a unique order, and still others seem to develop in ways that can't be described by the stage models (Seeger, 1983). Lichtenberg and Knox (1991), for example, carefully coded transcriptions of therapy sessions, searching for evidence of increasing regularity in communication patterns. Unexpectedly they found little change in the groups' communication patterns over time, and they also found that people who spoke frequently in the group tended to have lower, rather than higher, status. Also, the demarcation between stages is not clear-cut. When group conflict is waning, for example, feelings of cohesion may be increasing, but these time-dependent changes do not occur in a discontinuous, step-like sequence. Many theorists also prefer cyclical models to the stage theory proposed by Tuckman (Hill & Gruner, 1973; Shambaugh, 1978).

Evidence also suggests that the developmental processes of therapy groups are similar to stages seen in other groups, with two exceptions. First, much of the group's development is related to issues of conflict and authority. Many nontherapeutic groups bypass entirely the conflict period, or this phase occurs much later in the life of the group. But because therapeutic groups are often relatively unstructured and participants are uncomfortable with this flexibility, conflict often emerges early in the group and they center around the relationship between the leader and the rest of the group. In the orientation stage members are reticent, but as the group matures leader-member conflicts disrupt the group's functioning. Members may oscillate between "fight and flight": some may openly challenge the leader's policies and decisions (fight) whereas others may respond by minimizing contact with the leader (flight; Wheelan & McKeage, 1993). Most therapy experts note that, despite the temporary disruptions created by the conflict, this period is an essential one for the group to experience (Bales & Cohen, with Williamson, 1979; Bennis & Shepard, 1956; Fisher, 1980). Conflicts also help groups clarify their goals by forcing members to make choices that reflect the group's negotiated preferences. Conflict even provides a means of venting personal hostilities, but members can reduce this stress by confronting the problem and communicating dissatisfactions honestly and openly. If hostilities are never expressed in the group, they may build up to a point at which the group can no longer continue as a unit.

The dissolution stage also appears to be more problematic for members of therapeutic than nontherapeutic groups. Clients, in both group and individual therapies, often experience the end of therapy as a significant relationship loss, and unless their termination is properly managed the gains achieved during treatment can vanish (Quintana, 1993). This sense of loss can be magnified in group treatment, for if group members have become psychologically connected to the group, they may be reluctant to sever this source of psychological and social support. Therapists must help members cope with the emotional consequences of the group's dissolution by clarifying deadlines, teaching members to identify new groups that can provide the resources formerly provided by their therapeutic group, by recognizing through group rituals the group's end, and by offering continued support to members (Brabender & Fallon, 1996; Fieldsteel, 1996; Paternel, 1991; Schermer & Klein, 1996).

Leadership in Therapeutic Groups

Just as studies of groups in business, organizational, and military settings stress the impact of the leaders on the group (see also Chemers, this volume, chapter 16; Lord, Brown, & Harvey, this volume, chapter 12), so studies of therapeutic groups suggest that the group's processes and outcomes are shaped, to a great extent, by the characteristics, skills, and methods used by the therapist-leader.

Personal characteristics of leaders

On the trait side, some theorists, researchers, and practitioners believe that effective group therapists possess certain specific personality traits. For example, Slavson (1962, 1964) suggested that group therapists should be characterized by poise, maturity, ego-strength, perceptiveness, empathy, intuition, creativity, interest in others, a desire to help people, and a high tolerance for frustration. Parker (1972) emphasized a different set of traits: broad personal experience, self-awareness, open acceptance of others, expressiveness, and personal security. Kellerman's (1979) list is particularly lengthy and includes: simplicity, honesty, straightforwardness, an ability to succeed, commitment to diversity, tolerance, authenticity, trust, ability to empathize, warmth, acceptance, understanding, spontaneity, capability of maintaining distance, experimentation, sense of humor, and flexibility. Bowers, Gauron, and Mines (1984) even offer a procedure that identifies good group psychotherapists by assessing such personality traits as need for closure, individualism, extroversion, and "regression in the service of the ego." These conclusions are primarily speculative, however, as researchers have not yet conducted any systematic investigations of the identifying personal characteristics of group therapists.

Other analyses of the qualities desired in a group therapist stress outlook and attitude rather than personality traits. MacLennan (1975), for example, suggests that leaders should be skilled at expressing their feelings, and that they should be both perceptive and warm. Ideally the leaders should also be trained in the management of group situations, and be capable of responding empathically to others (Day, 1993). Carkhuff (1969a, 1969b) pinpoints specific behaviors that facilitate positive therapeutic outcomes: empathy, positive regard, concreteness, genuineness, confrontation, and immediacy. Anderson and Robertson (1985) expand Carkhuff's list by adding such specific skills as attending, communicating clearly, modeling, linking, interpreting, regulating, and facilitating closure.

Leaders should also be capable of developing sophisticated and accurate appraisals of group processes, which is a skill that develops through time and experience (Kivlighan & Quigley, 1991). Interpersonal learning also occurs as members become recipients, willing or not, of the advice and guidance of the leader and the other group members. When researchers analyzed recordings of therapy sessions, they discovered that therapists respond to clients at several levels. They provide information and guidance, ask a variety of questions, repeat and paraphrase the client's statements, confront the client's interpretations of problems, offer their own interpretation of the causes of client's problems, and express

their approval of and support for the client (Hill, Helms, Tichenor, Spiegel, O'Grady, & Perry, 1988).

Leadership style

The classic distinction between task and relationship leader that permeates virtually all studies of leadership emerges robustly in therapeutic groups. As early as 1948 Benne and Sheats suggested that an effective leader must fill such task roles as "initiator contributor," "information seeker," "opinion seeker," and "elaborator," as well as such socioemotional roles as "encourager," "harmonizer," and "group commentator." Lieberman, Yalom, and Miles (1973), in their study of therapeutic groups, noted that whereas some therapists stress the task at hand, others are supportive and warm. They describe one task-oriented leader they studied as follows (1973, p. 59):

He seemed to have a preplanned script of exercises he had decided to use in a particular meeting. . . . He did relatively little challenging or confrontation, but he frequently questioned individuals or invited them to participate in the group. In the observers' view, he was a highly managerial, highly structuring leader who made little use of his own person.

In contrast, the relationship-oriented leader focuses on the feelings, attitudes, and satisfactions of the group members. These group-oriented approaches, which are typified by encounters or T groups, encourage the analysis of the group's processes, with the therapist-leader sometimes facilitating process, but sometimes providing no direction whatsoever. Such leaders strive to make certain the group atmosphere is positive by boosting morale, increasing cohesiveness, and monitoring any interpersonal conflict. From Lieberman et al. (1973, p. 29):

He often invited questions and confronted members in an effort to "open them up." However, he gave a great deal of support. . . . He offered friendship, as well as protection, to group members. [He] expressed considerable warmth, acceptance, genuineness, and caring for other human beings.

Tinsley, Roth, and Lease (1989) surveyed therapists to assess self-reported variations in leadership style. They developed a large set of items measuring a variety of qualities including modeling ("I reveal my own feelings and personal attitudes to the group"), cognizing ("I help the group understand the meaning of nonverbal cues as they come up"), command stimulation ("I directly request members to respond"), managing/limit setting ("I intervene and stop the interaction if I feel it is necessary"), and personal ("I express considerable warmth, acceptance, and genuineness to individuals in the group," p. 50). Factor analysis of these self-ratings revealed eight factors that accounted for nearly 70% of the variance in ratings. The first factor was concerned primarily with task-focused leadership. This factor, labeled "cognitive direction" by the researchers, stressed management, mirroring, command, and charisma. The second factor, labeled "affective direction," stressed leadership behaviors that helped the group members express their emotions. The

third factor concerned socioemotional support for members, with such items as affective support, personal, and member liking loading significantly on this factor. The remaining factors pertained to group functioning, verbal stimulation, charismatic expertise, individual functioning, and reliance on nonverbal exercises.

Are task-oriented leaders more effective than socioemotional ones? Yalom (1995) suggests that the most effective leaders are ones that provide clear structure and direction, but at the same time make sure certain members' socioemotional needs are met. Bolman (1971), however, reports that leaders who were more relationship-oriented were better liked by group members, and the members of their groups reported more positive therapeutic gains. Other evidence suggests that, just as effective leaders in organizational settings sometimes vary their interventions to fit the situation, so effective leaders in therapeutic settings shift their methods as the group matures. Kivlighan (1997) arranged for all the members of psychoeducational groups to rate their leaders on their task-orientation (conditionality) and relationship-orientation (congruence/empathy) early and late in their groups' 26-session duration. He found that group members' stress reduction was positively correlated with task ratings taken early in treatment and with relationship ratings taken late in treatment. Kivlighan concludes that his findings are consistent with Hersey and Blanchard's (1977) model of leadership, which suggests that different types of leadership are most effective at different times in the group's developmental cycle.

Leaders' theoretical orientation

Group practitioners also vary greatly in their orientations and techniques. Some focus on emotions with Gestalt exercises, others concentrate on the here-and-now of the group's interpersonal process, and others train members to perform certain behaviors through videotaped feedback, behavioral rehearsal, and systematic reinforcement. Some are strict Freudians who seek deep interpretations of their patients' thoughts, whereas others only direct their comments at the group as a whole, refusing to even address specific members.

Lieberman, Yalom, and Miles studied the relationship between therapy leaders' orientation and their effectiveness as change agents in their classic 1973 study of experiential learning groups (Yalom, 1985; Lieberman, Yalom, & Miles, 1973). They randomly assigned 206 Stanford University students to groups representing 10 theoretical orientations: Gestalt, transactional analysis, T groups, Synanon, Esalen, psychoanalytic, marathon, psychodrama, encounter tape, and encounter. Trained observers coded the group's interactions, with particular attention to the leader's style. Before, during, immediately after, and six months following the participation they administered a battery of items assessing group members' self-esteem, attitudes, self-satisfactions, values, satisfaction with friendships, and so on. Measures also were completed by the co-members, the leaders, and by group members' acquaintances.

Somewhat unexpectedly, the project discovered that no one theoretical approach had a monopoly on effectiveness: For example, two separate Gestalt groups with different leaders were included in the design, but the members of these two groups evidenced widely discrepant gains. One of the Gestalt groups ranked among the most successful in stimulating participant growth, but the other group yielded fewer benefits than all of the

groups. These findings may have resulted from the lack of experience of the group leaders, as Russell (1978) suggests, but more recent studies provide general confirmation for the equivalency among treatments reported by Lieberman, Yalom, and Miles (Berah, 1981; Coche, Cooper, & Petermann, 1984; Falloon, 1981; Gonzalez-Menendez, 1985; Hajek, Belcher, & Stapleton, 1985; Knauss, Jeffrey, Knauss, & Harowski, 1983; Markham, 1985; Rosenberg & Brian, 1986; Sanchez, Lewinsohn, & Larson, 1980; Weinstein & Rossini, 1998; cf., Graff, Whitehead, & LeCompte, 1986; Kaplan, 1982).

Leadership and structure

The leader's directiveness is a key component of leadership style. Whereas task-oriented leaders tend to provide more structure than relationship-oriented leaders, the leader's tendency to structure the group's work can vary from high to low across both types of leaders (Eagly, Karau, & Makhijani, 1995). Some therapy-group leaders provide considerable structure for the group, particularly those who base their treatment on psychoanalytic, Gestalt, or behavioral methods. Leaders of such groups guide the course of the interaction, assign various tasks to the group members, and they occupy the center of the centralized communication network. In some instances, the group members may not even communicate with one another but only with the group leader. In contrast, other therapists advocate a nondirective style of leadership in which all group members communicate with one another. These group-oriented approaches, which are typified by encounters or T groups, encourage the analysis of the group's processes, with the therapist/leader sometimes facilitating the process, but at other times providing no direction whatsoever.

Studies of groups indicate that both directive and nondirective leaders are effective agents of change so long as they are caring, they help members interpret the cause of their problems, they keep the group on course, and they meet the members' socioemotional needs (Lieberman et al., 1973). Some evidence, though, suggests that moderate levels of structure and centralization are best for individuals with severe psychological problems. As Strong and Claiborn (1982) suggest, individuals who are highly aggressive, pathological, or resistant may be quite unresponsive to the social influences within groups. In consequence, greater structure is needed to produce beneficial change. Similarly, Grotjahn, Kline, and Friedmann (1983) argue that the structure a leader-centered approach provides is needed with severe behavior problems typical of inpatient and crisis groups. Friedmann (1983, p. 75), when working with crisis groups, argues that "passivity on the part of the therapist will be seen by the patient as a sign of disinterest." In consequence, the leader must be both directive and active, to the point of facilitating group processes, prompting self-disclosure, pointing out commonalities among members, and providing interpretation. The length of the treatment must be considered as well when evaluating the value of structure. Waltman and Zimpfer (1988), in a meta-analysis of studies of structure and group composition, found that highly structured groups suppress the relationship between the group's composition and its outcome. Hence, even if the group's members are compatible or incompatible in terms of their presenting problem or the personal qualities, these compatibilities will not influence the outcome of their therapy if the group is highly structured and meets for only a limited number of sessions.

Co-leadership

Many therapists work in teams of two when leading groups. Dies (1994), in his comprehensive review of 230 studies of leadership of therapeutic groups, found that 45% of the groups examined were co-led. Roller and Nelson (1993) identify a number of advantages of co-therapy for both group members and practitioners. Members of groups with two therapists can observe the therapist's "model [of] how to behave in a relationship" (p. 307), and the therapists can "help each other stay centered, probe their feelings, and analyze countertransference issues" (p. 307). Dies (1994, p. 141), however, is skeptical of the value of co-leadership, and concludes, "there is no evidence that the presence of two therapists enhances the quality or efficacy of therapeutic outcome." Indeed, Dies notes that co-leadership tends to complicate groups' processes, for the therapists must deal with power issues, negotiate over interpretation of group events, and sustain their trust in one another. Dugo and Beck (1997) also urge caution; they outline a detailed nine-stage model of co-therapy in groups that identifies a number of problems that therapists working together must confront. They note that in some cases the co-leaders of therapy groups must themselves seek counseling to deal with their relationship difficulties.

Gender and leadership

The tendency for group members to respond to men and women leaders differently has been documented in therapeutic groups (Greene, Morrison, & Tischler, 1981; Thune, Manderscheid, & Silbergeld, 1981; cf. Chemers, this volume, chapter 16). Greene and his colleagues, for example, examined group members' perceptions of male and female therapists in co-led groups. Although the therapists differed little in terms of skills and qualifications, male co-leaders were perceived as significantly more potent, active, instrumental and insightful than female co-leaders. Similarly, Thune and her colleagues, after examining co-leaders in several psychotherapy groups, discovered that gender was a more important determinant of status than either professional experience or professional affiliation (social worker vs. psychiatric nurse). These findings, which support sociological studies of status-formation processes, suggest that gender stereotypes may cause status problems for women (Lazerson & Zilbach, 1993). Many women overcome these problems, at least initially, by working with a male co-leader (Paulson, Burroughs, & Gelb, 1976; Rutan & Alonso, 1982).

Motives and Goals in Therapeutic Groups

Therapeutic groups, despite their emphasis on process and individual adjustment, none the less are working groups with procedures, agendas, and goals. In consequence, many of the conclusions drawn from studies of production units that pertain to agenda-setting, goal-clarification, and increasing member motivation apply equally well to therapeutic

groups (Higgenbotham, West, & Forsyth, 1988). For example, just as decision-making groups that spend time deliberately structuring their approach to their tasks generally outperform those who begin without first planning their activities, therapeutic groups that spend time planning their procedures yield greater gains than those that do not include any preplanning of strategy (Bednar & Battersby, 1976; Bednar & Kaul, 1978; Kaul & Bednar, 1994). This planning need not be elaborate to be effective. Martin and Shewmaker (1962) found that simply giving patients written instructions concerning group processes led to more positive outcomes. Similarly, when Truax and Carkhuff (1965) and Truax, Shapiro, and Wargo (1968) presented clients with tapes of several segments of actual group therapy sessions, they found that this exposure to group processes led to a reduction of schizophrenic symptoms (Truax & Carkhuff, 1965), and positive changes in MMPI scores (Truax et al., 1968). Strupp and Bloxom (1973) pretrained some group members by exposing them to a film describing the basis for psychotherapy, group members' roles, and the activities to be undertaken during therapy. The film also emphasized a number of specific points, including expression of personal feelings, the value of emotional expression, the responsibilities of the group member, the difference between adaptive and maladaptive behavior, and the potential gains that could be reasonably expected. On measures of improvement, satisfaction with treatment, symptom discomfort, and motivation, clients who saw the film responded more positively than clients who saw an irrelevant film.

These and other studies suggest that attempts to clarify the processes used to achieve change in groups by providing either pregroup training or information during the therapy lead to more positive therapeutic outcomes. As Bednar and Kaul (1978) conclude, "Ambiguity and lack of clarity tend to be associated with increased anxiety and diminished productivity and learning in a variety of settings" (p. 793), whereas interventions designed to decrease ambiguity "have been associated with significant and constructive effects" (p. 794; see Hardin, Subich, & Holvey, 1988). More recently they have put it more simply: "practice would be improved with the judicious application of pregroup training" (Kaul & Bednar, 1994, p. 183).

Therapeutic Factors in Groups

How does therapy work? Experts such as Strupp (1986; Butler & Strupp, 1986) and Frank (1982) suggest that individualistic, one-on-one therapies, despite their differences, share some common properties, and these commonalties may be responsible for their effectiveness. Most therapies increase clients' confidence in themselves, and provide them with a new way of viewing themselves and their problems. Therapists, too, tend to deal with their clients in positive, empathic ways, and this relationship may prove to be more helpful than the lessons learned through the relationship.

The nonspecific factors hypothesis applies equally well to group approaches to treatment. Lakin (1972), for example, argued that the successful group must facilitate emotional expression and feelings of belongingness, but it also must stimulate interpersonal comparisons and provide members with an interaction forum. Bednar and Kaul (1978)

identified the “developing social microcosm,” “interpersonal feedback and consensual validation,” and “reciprocal opportunities to be both helpers and helpees in group settings” as key ingredients (p. 781). Yalom (1995) similarly identifies a number of curative factors operating in therapeutic groups, including the installation of hope, universality, the imparting of information, altruism, the corrective recapitulation of the primary family group, the development of socializing techniques, imitative behavior, interpersonal learning, group cohesiveness, catharsis, and existential factors.

Yalom based his model of curative factors on his clinical experience and his own empirical research, but the list is generally consistent with theoretical analyses of groups in general and therapeutic groups in particular (e.g., Butler & Fuhrman, 1983a, 1983b; Crouch, Bloch, & Wanlass, 1994; Forsyth, 1991, 1999; Markovitz & Smith, 1983; Maxmen, 1973, 1978; Rohrbaugh & Bartels, 1975; Rugel & Myer, 1984; Sherry & Hurley, 1976; Yalom, 1995; Yalom & Vinogradov, 1993). These change-promoting factors are summarized in Table 26.1 and discussed below.

Universality and hope

All groups, but therapeutic groups in particular, reduce members' feelings of anxiety, stress, and discomfort. When lone individuals find themselves in dangerous or anxiety-provoking situations, they prefer the company of other people rather than remain alone. This gregariousness is based, in part, on the instinctive recognition of safety in numbers, but it also serves psychological and information purposes. Baumeister and Leary (1995), for example, argue that human beings need to belong to intimate groups characterized by reliable interrelationships among members. As Schachter (1959) suggests, when individuals cannot evaluate the accuracy of their understanding of a situation, they seek out others to acquire information through social comparison. Affiliating with others also reduces the stress and anxiety, provided the other group members supply reassuring, fear-allaying information about the situation. Whereas individuals facing unpleasant circumstances alone may feel discouraged and pessimistic, as group members they gain a sense of universality and hope.

Many groups – and self-help groups in particular – encourage social comparisons through rituals and traditions. Everyone at an AA meeting, for example, publicly states “I am an alcoholic,” and this ritual reassures participants that their problems are shared by others. Evidence confirms this practice, for Frable, Platt, and Hoey (1998) found that individuals responded more positively to a stressful situation when they were with people who faced problems that were similar to their own. Because of these benefits, some therapists avoid diversity in their groups, particularly with regard to dysfunction and diagnostic category (Piper, 1994).

Groups also provide members with targets for both downward social comparison and upward social comparison. When individuals compare themselves with someone who is experiencing even more severe hardships or someone who is not coping with their problems effectively – downward social comparison – their sense of victimization decreases and their overall sense of self-esteem increases (Gibbons & Gerrard, 1989; Wood, Taylor, & Lichtman, 1985). And when they compare themselves to people who are coping effec-

Table 26.1. Factors that Promote Change in Groups

<i>Factor</i>	<i>Definition</i>	<i>Meaning to member</i>
Universality	Recognition of shared problems, reduced sense of uniqueness	We all have problems
Hope	Increased sense of optimism from seeing others improve	If other members can change, so can I
Vicarious learning	Developing social skills by watching others	Seeing others talk about their problems inspired me to talk, too
Interpersonal learning	Developing social skills by interacting with others	I'm learning to get along better with other people
Guidance	Accepting advice and suggestions from the group members	People in the group give me good suggestions
Cohesion	Feeling accepted by others	The group accepts me and understands me
Self-disclosure	Revealing personal information to others	I feel better for sharing things I've kept secret for too long
Catharsis	Releasing pent-up emotions	It feels good to get things off my chest
Altruism	Increase sense of efficacy from helping others	Helping other people has given me more self-respect
Insight	Gaining a deeper understanding of oneself	I've learned a lot about myself

Source: Forsyth (1999).

tively with their problems, members identify ways to improve their own situation (Buunk, 1995; Taylor & Lobel, 1989). Exposure to extraordinarily successful people – a group member who, despite many personal problems, seems to be adjusting marvelously – can threaten group members, but can also remind members that their problems are solvable. Contact with such people tends to be reassuring, but direct comparison with them is not (Taylor & Lobel, 1989).

Snyder and his colleagues suggest that joining with others sustains and enhances hope. Hope, in Snyder's model, is not then just a sense of confidence, but an enhanced motivational state that is sustained by clearly identified goals, pathway thoughts, and a sense of agency (Klausner, Snyder, & Cheavens, in press; Snyder, 1994; Snyder, Cheavens, & Sympton, 1997). Snyder's model of hope explains why Kolb and Boyatzis (1970) found that positive changes in personality were most pronounced among T-group members who developed personal plans for evaluating their performance in relationship to clearly established goals. The hope model also explains why pretraining clients, which was discussed earlier in the chapter, improves therapeutic outcome. Pretraining, by clarifying pathway thinking directly, raises hope indirectly.

Klausner et al. (in press) confirmed the value of a hope-based group intervention in a study of geriatric outpatients suffering from depression. The investigators developed a group intervention that stressed individualized goal formation and training in both pathway and agency thinking. At the end of 11 weeks of treatment group members were less depressed than they were at the start of treatment, and their depression levels were also lower than those shown by control-group subjects. Worthington, Hight, Ripley, Perrone, Kurusu, and Jones (1997) also developed a successful marital-enrichment intervention based on Snyder's model of hope. They reduced the pessimism felt by many married people about their chances of avoiding divorce in a hope-enrichment therapy that stressed the components of Snyder's model. Training involved structured exercises designed to help participants identify their relationship goals and the steps that they should take to reach these goals. Trained couples had higher relationship satisfaction and better interaction skills than couples in a control condition.

Social learning

Most therapists, when contrasting individual and group therapies, stress the interpersonal resources of group approaches. The patient learns from the therapist in one-on-one therapy, but in group therapy the patient can learn from the therapist, from other group members, and by watching the interactions between the therapist and other group members (Lieberman, 1980; Yalom, 1975, 1995). When a group member appropriately expresses pent-up hostility, observing group members learn how they can express emotions that they have been suppressing. When the group leader skillfully draws a reticent group member into the discussion by disclosing some personal information, the other group members learn about the relationship between self-disclosure and intimacy. Group leaders also model desirable behaviors by treating the group members in positive ways and avoiding behaviors that are undesirable (Dies, 1994). Vicarious learning (modeling), interpersonal learning, and guidance (direct instruction) all occur in therapeutic groups (see Table 26.1).

Modeling. Researchers confirmed the importance of modeling in a study of phobias. People seeking help for their disabling fear of spiders were randomly assigned to small (3 or 4 members) or large (7 or 8 members) groups. The groups then spent three hours observing a model who showed no fear when handling a spider. Members of both groups showed sharp reductions in their fear of spiders, although improvement rate was slightly higher in the small group rather than the large group (Lars-Goeran, 1996). Groups that use explicit modeling methods show greater improvement than groups that only discuss the problematic behaviors (Falloon, Lindley, McDonald, & Marks, 1977).

Interpersonal learning. All groups provide members with direct feedback about personal qualities ("You are a warm, sensitive person," "You seem lonely,"), but also indirect feedback in the form of nonverbal signals and reactions. Group members themselves tend to appreciate the feedback they get from their groups, for when rating the most valuable aspect of the group experience they give high scores to interpersonal processes: "the group's teaching me about the type of impression I make on others," "learning how I come across

to others,” and “other members honestly telling me what they think of me” (Yalom, 1975, p. 79). Extended contact with others in a group setting may provide individuals with corrective information about their skills and abilities.

Some therapeutic groups exchange so much evaluative information that members withdraw from the group rather than face the barrage of negative feedback (Scheuble, Dixon, Levy, & Kagan-Moore, 1987). Group leaders must intervene to regulate the flow of information between members so that individuals learn the information they need to change in positive ways. Group members also tend to deny the validity of information that is too discrepant from their own self-views. Jacobs and his colleagues, for example, arranged for subjects to participate in a short-term, highly structured “sensitivity” group (Jacobs, 1974). When subjects rated one another on a series of adjectives, Jacobs found that they consistently accepted positive feedback, but consistently rejected negative feedback. This “credibility gap” occurred despite attempts to vary the source of the information (Jacobs, 1974), the sequencing of the information (Jacobs, Jacobs, Gatz, & Schaible, 1973; Schaible & Jacobs, 1975), the behavioral and affective focus of the feedback (Jacobs, Jacobs, Cavior, & Feldman, 1973), and the anonymity of the appraisals (Jacobs, Jacobs, Cavior, & Burke, 1974). These findings attest to the potential value of group interventions as self-esteem-enhancing mechanisms, for the tendency to accept only positive feedback screens the group members from negative, but therapeutic, social information.

Guidance. Groups also influence members by guiding, directly and indirectly, their opinions, attitudes, and values. As Newcomb (1943) verified in his study of college students, when individuals move from one group to another they more often than not abandon their old group’s outlook and adopt the view of their new group. An individual having problems regulating his use of alcohol may, for example, believe that he can learn to drink in moderation. If he joins an AA group, however, he will be repeatedly exposed to a different set of values and beliefs: ones that maintain that alcoholism is a disease that can only be controlled by abstinence. Over time the individual’s beliefs will likely change to match the group’s opinion (e.g., Crandall, 1988; Fisher, 1988; Miller & Prentice, 1996). Fisher (1988), for example, developed an extensive educational program designed to change people’s perceptions of norms related to sexual conduct. His AIDS Risk Reduction Project changed participants’ attitudes toward condoms and anti-condom norms by exposing them to videotaped testimonials of medical experts and fellow students (Fisher & Fisher, 1993). Participants also watched videotapes of couples discussing safe sexual practices, negotiating the use of condoms, and exiting threatening situations, and they practiced these behavioral skills with other members of the group, who provided them with encouragement and social support (Fisher & Fisher, 1992).

Cohesion

Yalom (1985) suggests that therapeutic groups are most effective when they are cohesive; that unity within the group, although not a sufficient condition for change, is a necessary one. Yalom’s suggestion is consistent with Cartwright’s 1951 analysis of groups as change agents, for he argued that members must be committed to the group before they will change in reaction to its influence. Others, too, have noted that the “cotherapeutic

influence of peers" in the therapy group requires group cohesion (Bach, 1954, p. 348; Frank, 1957; Goldstein, Heller, & Sechrest, 1966).

Cohesion likely influences the curative impact of a group by increasing the psychological intensity of the therapeutic experience (Marziali, Munroe-Blum, & McCleary, 1997). People in cohesive groups more readily accept the group's goals, decisions, and norms. Furthermore, pressures to conform are greater in cohesive groups, and individuals' resistance to these pressures is weaker (Back, 1951). Once a norm emerges in a cohesive group, members take harsher measures to bring dissenters into line than do the members of noncohesive groups (Schachter, 1951). Cohesive groups, more than noncohesive ones, probably provide members with more emotional support, advice and guidance, tangible assistance, and positive feedback (Posluszny, Hyman, & Baum, 1998). People also cope more effectively with stress when they are in cohesive groups (Bowers, Weaver, & Morgan, 1996; Zaccaro, Gualtieri, & Minionis, 1995).

Cohesive groups are not, however, without drawbacks. Cohesion has also been linked to social pressures of such intensity that individual members are overwhelmed and prey to illusions, misperceptions, and faulty communication. Furthermore, given the right (or wrong) combination of circumstances, cohesiveness encourages hostility and interpersonal rejection and promotes disabling overdependence in long-term members. If group members reject the therapist's attempts to establish change-producing norms cohesiveness will only intensify their resistance (Forsyth & Elliott, 1999).

Disclosure and catharsis

In many cases members of therapeutic groups hope to learn better ways to communicate with other people. They may, for example, be unable to reveal personal, intimate information to others (Corey & Corey, 1992; Leichtenritt & Shechtman, 1998). They may also fail to express their emotions. Individuals experiencing personality and psychological disturbances, for example, often disclose the wrong sorts of information at the wrong time (McGuire & Leak, 1980) and males, in particular, tend to be reserved in their rate of self-disclosure (Brooks, 1996; Kilmartin, 1994; Shechtman, 1994).

Group treatments provide a venue for self-expression. Groups generally insist on open disclosure by members, with such disclosure protected by the promise of confidentiality (Kaul & Bednar, 1986; Roark & Sarah, 1989; Tschuschke & Dies, 1994). By sharing information about themselves, members are expressing their trust in the group and signaling their commitment to the therapeutic process (Rempel, Holmes, & Zanna, 1985). Moreover, as Pennebaker's (1990) studies of confession suggest, the disclosure of troubling, worrisome thoughts can reduce the discloser's level of tension and stress. Individuals who keep their problems secret, but continually ruminate about them, display signs of physiological and psychological distress.

Members also can vent strong emotions in groups. The group offers members the opportunity to express strong emotions that they cannot express in any other circumstances, and this catharsis might ease their level of anxiety. Emotional release has been identified by some as a great benefit of groups, but others suggest that "blowing off steam" may actually heighten members' psychological distress and upset (see Ormont, 1984).

Altruism

Group approaches to treatment, unlike individualistic methods, capitalize and exploit people's natural tendency to seek help from peers and friends first, and professional therapists second. When individuals experience problems, they usually turn to friends and families for help (Wills & DePaulo, 1991). Individuals experiencing work-related stress cope by joining with coworkers rather than human resource specialists (Caplan, Vinokur, Price, & van Ryn, 1989; Cooper, 1981). Psychotherapy groups include an expert leader, but they also include peers who offer insights and advice to one another. This mutual assistance provides benefits for both parties, for the helper "feels a sense of being needed and helpful; can forget self in favor of another group member; and recognizes the desire to do something for another group member" (Crouch et al., 1994, p. 285).

Self-help groups place mutual assistance among members at center-stage. Such groups usually resist the leadership of a professional, and instead insist that members help themselves and one another. A support group that deals with psychological consequences of open-heart surgery, for example, tells members that "you are not completely mended until you help mend others" (Lieberman, 1993, p. 297). AA groups formalize and structure helping by pairing newcomers with sponsors who meet regularly with the new member outside of the regular group meetings.

Insight

Many individuals feel that mental health and self-knowledge are highly correlated; that only people who know themselves well are truly normal and well-adjusted. Although this assumption appears to be groundless (Sedikides & Strube, 1997), group members tend to rate therapeutic experiences positively when they feel they have promoted self-understanding. When participants in therapeutic groups were asked to identify events that took place in their groups that helped them the most, they stressed universality, interpersonal learning, cohesion (belonging), and insight (Kivlighan & Mullison, 1988; Kivlighan, Multon, & Brossart, 1996). Other studies that asked group members to rank or rate the importance of various curative factors generally find that group members emphasize self-understanding, interpersonal learning, and catharsis (Butler & Fuhriman, 1983a; Markovitz & Smith, 1983; Maxmen, 1973, 1978; Rohrbaugh & Bartels, 1975; Rugel & Meyer, 1984). In general, individuals who stress the value of self-understanding tend to benefit the most from participation in a therapeutic group (Butler & Fuhriman, 1983b).

The Effectiveness of Groups

Therapeutic groups have one basic goal: To enhance the psychological adjustment of their members. So, just as a production line is evaluated by reviewing its efficiency or the caliber of a sports team is determined by its record in competitive contests, the value of a ther-

apeutic group is determined by its success in reaching its goal: Do members leave the group better adjusted than when they entered?

Unfortunately, the available data are insufficient to draw clear conclusions about the effectiveness of group approaches to treatment. Groups are difficult to study, and so studies of their effectiveness often suffer from fatal flaws in design and execution. The use of varied and undocumented therapeutic methods, with different types of clients, by therapists who differ in skills and experience, in studies that too frequently lack valid measures and inadequate controls, make it difficult to draw firm conclusions (Bednar & Kaul, 1978, 1979, 1994; Burlingame, Kircher, & Taylor, 1994; Fuhriman & Burlingame, 1994; Kaul & Bednar, 1986). Meltzoff and Kornreich (1970), for example, were guardedly optimistic about the utility of group therapies because 80% of the methodologically sound studies reported either major or minor benefits for clients, whereas nearly all of the studies that reported no benefit were methodologically flawed. Bednar and Kaul's comprehensive and long-term monitoring of group methods are guardedly positive, although they continue to lament the lack of rigor in research (Bednar & Kaul, 1978, 1979, 1994; Kaul & Bednar, 1986).

Meta-analytic reviews, including those that code studies for methodological rigor, generally suggest that group approaches are as effective as individual methods (Davis, Olmsted, Rockert, Marques, & Dolhanty, 1997; Fuhriman & Burlingame, 1994; Hoag & Burlingame, 1997; Robinson, Berman, & Neimeyer, 1990; Shapiro & Shapiro, 1982; Smith, Glass, & Miller, 1980; Tillitski, 1990). Smith et al. (1980) and Miller and Berman (1983) found that individual and group treatments were roughly equivalent in terms of effectiveness. Fuhriman and Burlingame (1994), in their massive review of 700 group therapy studies and seven meta-analytic reviews of prior research, concluded that group methods are effective treatments for a wide variety of psychological problems. Similarly, Faith, Wong, and Carpenter (1995), in a meta-analytic review of 63 studies of sensitivity-training, concluded that these groups generally led to increases in self-actualization and self-esteem, and improved interpersonal relations. They noted that these effects increased in larger groups, when the groups met for longer periods of time, and when the measures focused on behavioral outcomes rather than self-reported ones. Burke and Day's (1986) analysis of the long-term effectiveness of T groups in organization-development interventions reached similar conclusions.

Burlingame and his colleagues (McRoberts, Burlingame, & Hoag, 1998) also concluded that groups are as effective as individual treatments when they meta-analyzed studies that compared both individual and group approaches. They also tracked a number of other treatment and procedural variables that past researchers identified as key determinants of therapeutic success, but the only factors that covaried significantly with outcome were client diagnosis, number of treatment sessions, and the year in which the study was conducted. Group therapies were more effective with clients: (a) who were not diagnosed clinically; (b) who were suffering from substance abuse problems and/or chemical dependencies; (c) who attended 10 or fewer sessions. Older studies – those conducted prior to 1980 – were more likely to favor group over individual approaches.

Bednar and Kaul, in summarizing the literature on group therapy, conclude the “accumulated evidence indicates that group treatments have been more effective than no treatment, than placebo or nonspecific treatments, or than other recognized psychological

treatments, at least under some circumstances” (Bednar & Kaul, 1994, p. 632). This positive conclusion, however, requires some qualification. First the empirical evidence is not definitive. Whereas a number of reviews are positive, others conclude that group therapy is not as potent as individual therapy (e.g., Abramowitz, 1977; Dush, Hirt, & Schroeder, 1983; Engels & Vermey, 1997; Kilmann & Sotile, 1976; Nietzel, Russel, Hemmings, & Gretter, 1987; Parloff & Dies, 1977; Solomon, 1982; Stanton & Shadish, 1997). Second, the changes brought about by group experiences *may* be more perceptual than behavioral. Bednar and Kaul (1979), after culling the studies of change in groups that were methodologically flawed, concluded that most studies had reported changes only on self-report data, rather than behavioral data. Reviews of experiential groups also generally find stronger evidence of perceptual changes than of behavioral changes (Bates & Goodman, 1986; Berman & Zimpfer, 1980; Budman, Demby, Feldstein, & Gold, 1984; Ware, Barr, & Boone, 1982). Faith et al. (1995), however, did not confirm this tendency in their review. Third, in some cases, groups can do more harm than good for participants. As Bednar and Kaul note, a participant may decide to leave the group before he or she has benefited in any way, and in rare cases an individual may be significantly harmed by the group experience.

Therapeutic Groups as Groups

Therapeutic groups, despite their focus on the psychological health of their members, none the less share many of the properties common to all groups. They develop over time. They have goals to accomplish. They have leaders that guide them, and members who strive to reject the authority of those leaders. Therapeutic groups possess features that set them apart from other groups, but their development, their structures, and their outcomes are shaped by processes that are common to all groups. Therapeutic groups are groups first, and therapeutic groups second.

Many issues related to therapeutic groups – their development, structure, leadership, and effectiveness – remain only dimly understood. Curiously, when psychology emerged as a mental health field after World War II, many of its central practitioners were academicians who specialized in the study of group processes: Lewin (1951) being the prime example of an individual who prospered in the science and in the practice of groups. Over time, however, the professional identity of researchers and therapists diverged until now their shared roots are nearly unrecognizable. Even though group researchers and group therapists are likely to agree on foundational assumptions, those who study groups and those who use them to promote change rarely travel the same path (Forsyth, 1997). In consequence, practitioners have not yet fully exploited the power of groups, and researchers have only begun to explain the dynamic interrelationships between a group and its members. Given the importance of groups, this rift between the scientific study of groups and use of groups to achieve therapeutic goals must be closed by developing more elaborate conceptualizations of groups that take into account both their change-producing properties and their properties as groups *per se*.

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