Educational Linguistics

Melinda Whong
Kook-Hee Gil
Heather Marsden *Editors*

Universal Grammar and the Second Language Classroom

Springer

Universal Grammar and the Second Language Classroom

Educational Linguistics

Volume 16

Educational Linguistics is dedicated to innovative studies of language use and language learning. The series is based on the idea that there is a need for studies that break barriers. Accordingly, it provides a space for research that crosses traditional disciplinary, theoretical, and/or methodological boundaries in ways that advance knowledge about language (in) education. The series focuses on critical and contextualized work that offers alternatives to current approaches as well as practical, substantive ways forward. Contributions explore the dynamic and multi-layered nature of theory-practice relationships, creative applications of linguistic and symbolic resources, individual and societal considerations, and diverse social spaces related to language learning.

The series publishes in-depth studies of educational innovation in contexts throughout the world: issues of linguistic equity and diversity; educational language policy; revalorization of indigenous languages; socially responsible (additional) language teaching; language assessment; first- and additional language literacy; language teacher education; language development and socialization in non-traditional settings; the integration of language across academic subjects; language and technology; and other relevant topics.

The *Educational Linguistics* series invites authors to contact the general editor with suggestions and/or proposals for new monographs or edited volumes. For more information, please contact the publishing editor: Jolanda Voogd, Asssociate Publishing Editor, Springer, Van Godewijckstraat 30, 3300 AA Dordrecht, The Netherlands.

For further volumes:
http://www.springer.com/series/5894

Melinda Whong • Kook-Hee Gil
Heather Marsden
Editors

Universal Grammar and the Second Language Classroom

Springer

Editors
Melinda Whong
Department of Linguistics and Phonetics
School of Modern Languages and Cultures
University of Leeds
Leeds, West Yorkshire, UK

Kook-Hee Gil
School of English Literature, Language and Linguistics,
University of Sheffield
Sheffield, UK

Heather Marsden
Department of Language and Linguistic Science
University of York
Heslington, York, UK

ISSN 1572-0292
ISBN 978-94-007-6361-6 ISBN 978-94-007-6362-3 (eBook)
DOI 10.1007/978-94-007-6362-3
Springer Dordrecht Heidelberg New York London

Library of Congress Control Number: 2013940172

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Acknowledgement

The editors would like to thank the speakers and audiences at the two events that sparked the creation of this volume: the *Applied Generative Second Language Acquisition Workshop* held in York in 2010, and the colloquium *Half a century on: What relevance does generative SLA have for language teaching?* held at AAAL 2011 in Chicago. We are grateful for the invaluable feedback from colleagues who acted as reviewers for each chapter and also for the helpful comments on the whole manuscript from an anonymous reviewer. We would particularly like to thank Roumyana Slabakova for her support and encouragement of our pursuit of this project. Finally, we thank the editors at Springer who have been continuously helpful and responsive during the entire process.

Contents

Contributors

Joyce Bruhn de Garavito Department of Modern Languages and Literatures, University of Western Ontario, London, ON, Canada

María del Pilar García Mayo Department of English Studies, University of the Basque Country (UPV/EHU), Vitoria-Gasteiz, Spain

Kook-Hee Gil School of English Literature, Language and Linguistics, University of Sheffield, Sheffield, UK

Makiko Hirakawa Faculty of Language and Literature, Bunkyo University, Minami-Ogishima, Koshigaya, Saitama, Japan

Mika Kizu Department of Japan and Korea, SOAS, University of London, London, UK

Kobe University, Kobe, Hyogo Prefecture, Japan

Heather Marsden Department of Language and Linguistic Science, University of York, Heslington, York, UK

Bede McCormack Department of Education and Language Acquisition, LaGuardia Community College, City University of New York, Long Island City, NY, USA

Tom Rankin Department of English Business Communication, Vienna University of Economics and Business, Vienna, Austria

Roumyana Slabakova Department of Linguistics, University of Iowa, Iowa City, IA, USA

IKERBASQUE Basque Foundation for Science

Neal Snape Department of English, Gunma Prefectural Women's University, Tamamura-machi, Sawa-gun, Gunma-ken, Japan

David Stringer Department of Second Language Studies, Indiana University, Bloomington, IN, USA

Elena Valenzuela Modern Languages and Literatures, University of Ottawa, Ottawa, ON, Canada

Melinda Whong Department of Linguistics and Phonetics, School of Modern Languages and Cultures, University of Leeds, Leeds, West Yorkshire, UK

Martha Young-Scholten School of English Literature, Language and Linguistics, Newcastle University, Newcastle upon Tyne, UK

Noriaki Yusa Miyagi Gakuin Women's University, Sendai, Miyagi-ken, Japan

Chapter 1
Introduction: Generative Second Language Acquisition and Language Pedagogy

Melinda Whong, Kook-Hee Gil, and Heather Marsden

1.1 Introduction

For the uninitiated, it might seem quite obvious that research in second language acquisition is of relevance to the profession of language teaching. Yet in reality this relationship is not very clear, especially in terms of more formal approaches to second language acquisition and Chomskyan generative second language acquisition (henceforth GenSLA), in particular. From the point of view of language pedagogy, the question of what role theory should play in practice is one of continuous debate. This is not a trivial question; researchers need to isolate variables in order to investigate phenomena. In doing so, the complexity of reality is immediately compromised. Teachers, by contrast, must contend with reality in all of its complexity whether an explanation exists or not. Nevertheless, assuming that being able to explain phenomena means having a better understanding, we take the view that the more classroom instruction is underpinned by an understanding of theoretical principles, the more effective it will be. Accepting, then, that there is a role for theory, there is the added question of which theories.[1] As noted some time ago by

[1]For more discussion of the relationship between theory and practice in language teaching, see Cumming (2008) and the subsequent TESOL Symposium papers.

M. Whong (✉)
Department of Linguistics and Phonetics, School of Modern Languages and Cultures,
University of Leeds, Leeds, West Yorkshire, UK
e-mail: m.whong@leeds.ac.uk

K.-H. Gil
School of English Literature, Language and Linguistics,
University of Sheffield, Sheffield, UK
e-mail: k.gil@sheffield.ac.uk

H. Marsden
Department of Language and Linguistic Science,
University of York, Heslington, York, UK
e-mail: heather.marsden@york.ac.uk

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*,
Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_1,

Stern (1983), the practice of language teaching implicates assumptions from a number of areas of inquiry ranging from language to learning, to education, and to society. Clearly, even if we limit ourselves to language and learning, this still leaves us with a broad arena of research as the range of subfields within these two subjects is as diverse as it is wide.

A key aim of this volume is to present GenSLA research as a body of theory-driven evidence about L2 acquisition that classroom research and practice could usefully draw on. This aim has emerged partly in response to the recent 'social turn' in educational linguistics (Firth and Wagner 1997; Block 2003), which focuses on the social context in relation to classroom interaction and thus downplays the role of grammar teaching. The need to address a broader range of pedagogic factors—including social context—in the language classroom is captured in the well-known appeal by Brumfit (1991:46) for more emphasis on 'real-world problems in which language is the central issue'. While we agree that language teaching should include a wide range of considerations, we are also eager to ensure that there is no erosion of expertise in the fundamentals of language within language pedagogy. There is a real possibility of decreasing linguistic expertise given the diverse nature of academic interest in language learning at present. Such a decrease in itself could be seen as one reason for a widening gap between linguistic theory and language teaching practice. (For more discussion, see Piske and Young-Scholten 2009; Whong 2011; Chap. 2 by Bruhn de Garavito, this volume) A second aim of this volume, then, is to propose ways of bridging the theory–practice gap.

The volume addresses these aims by challenging a number of GenSLA researchers—many of whom also have experience as language teachers—to explore applications of GenSLA research to the language classroom. Specifically, we asked a range of GenSLA researchers, from early career to the very experienced, to each take a different area of GenSLA research and to explore it in terms of implications for the language classroom. What has resulted is what we hope will be a groundbreaking volume with three ambitious aims: (i) to highlight the value of formal linguistic expertise and of findings from GenSLA research to the language classroom, (ii) to inspire other GenSLA researchers to consider pedagogical implications of their research and (iii) to spark a dialogue with researchers of second language learning outside the GenSLA paradigm.

As there are very few examples of applied GenSLA in the current literature to use as a model,[2] each author has approached this challenge in their own way. Some have engaged in classroom research, testing the effectiveness of teaching particular linguistic phenomena. Others review existing research findings in GenSLA, discussing how these findings are useful for language pedagogy. Most authors echo the theme that knowledge of generative linguistics will provide teachers with needed expertise. Some go further, showing that the grammar included in most language teaching textbooks is lacking in terms of certain basic properties of language now well understood among linguists. What unites them all is the conviction that

[2] A few leading examples are Rothman (2008, 2010) and Long and Rothman (2013).

GenSLA research can inform language pedagogy. Importantly, however, no one is claiming that GenSLA is the only approach that is useful to the classroom. Nor is there any attempt to suggest a generative model for language teaching or new teaching methods. Instead, GenSLA is offered as a principled basis for considerations of language pedagogy, with contributions in terms of an understanding of the properties of language as well as how knowledge of those properties develops as a result of exposure to language input.

In the next section, we will explore some of the fundamental tenets of generative theory in order to provide background for those readers who may not be grounded in generative linguistics. We will not attempt a comprehensive introduction to generative theory, referring the reader to one of the many introductory texts that already exist.[3] Instead, we provide background on the broad conceptual basis of core generative thinking, showing how the essence of the theory has remained constant despite continuous evolution in the specifics of the theory since it was first proposed. We also refer the reader to the chapters of this volume themselves, where more specific background can be found which situates the content of each chapter. We draw particular attention to the opening chapter by Bruhn de Garavito, which includes more historical background on the divide between the language pedagogic community and GenSLA, as a starting point for bridging the divide which she addresses by examining the acquisition of L2 Spanish object pronouns.

1.2 Conceptual Foundations

1.2.1 Generative Linguistic Theory

The title of this volume—Universal Grammar and the Second Language Classroom—reflects the contributors' shared view of language and language development. All authors assume that Universal Grammar (UG)—in the form of a set of innate principles about grammar formation—underpins language acquisition by constraining the form of possible grammars. It is, of course, true that the exact mechanisms posited within the generative paradigm to capture UG in formal terms have changed as the theory has developed, from early transformational models (e.g. Chomsky 1957) to Government–Binding theory within the Principles and Parameters model (Chomsky 1981) and to the current instantiation of the theory as the Minimalist Programme (Chomsky 1995). It is also true that new sets of complex theorems and associated terminology signal changes in understanding of the formal mechanisms among generative theorists. Yet, the core of the theory has remained constant throughout

[3]For example, both Katamba et al. (2011) and Fasold and Connor-Linton (2006) include useful introductory chapters on generative linguistics and first and second language acquisition.

these changes. Specifically, generative theory holds that there is an innate set of constraints that are distinct for language development, and these constraints (i.e. UG) serve to guide the language acquisition process. This innate linguistic knowledge is argued to account for the awe-inspiring fact that very young children come to know very complex language systems in a relatively short amount of time and after exposure to limited data (namely, the utterances that they hear from caregivers)—without making errors that might be predicted if the acquisition process were unconstrained. The observation that children attain highly complex linguistic knowledge, including knowledge of phenomena for which the input they encounter does not contain direct evidence, is referred as 'poverty of the stimulus'. The fact that children overcome the poverty-of-the-stimulus problem inherent in language acquisition is the key motivation for the postulation of UG.

Principles and Parameters is perhaps the best known, and most accessible, UG model. Within this model, UG consists of a set of principles that are crosslinguistically invariant, and parameters whose values must be set on the basis evidence from the target language being acquired. The principles constrain structure building across different languages in a unified way. For example, there is a principle of consistent hierarchical organisation from the word level to the phrasal level (known as the X'-schema), which applies to all languages. Parameters, on the other hand, determine crosslinguistic variation, by offering finite sets of options from which learners (subconsciously) choose, depending on the input that they encounter. A well-known example is the null subject parameter, which can be argued to offer two settings: [+null subject] for languages where null subjects are the norm and [−null subject] for languages where subjects are obligatory. A learner acquiring English will select [−null subject] based on the evidence of use of subjects in the input.[4] Once a given parameter value is set, other parameters associated with that setting may also be automatically set, thereby fast-tracking the learner toward the target grammar.

As the Principles and Parameters model has evolved into the Minimalist Programme, attention has shifted to the interaction of different domains within the grammar (e.g. syntax with semantics and pragmatics). In this model, the term *narrow syntax* refers to the recursive procedure of structure building. The explanation of how syntactic structures are compatible with meaning on the one hand and sound systems on the other lies in the 'interface' of syntax with other core linguistic domains such as semantics and phonology, as well as with pragmatics and discourse. These latter two have recently been referred to as external domains because they lie outside the core computational component in terms of what has traditionally been seen as fundamental to generative theory.

Commitment to the notion of parameters has remained constant in generative theory, despite changes in specific approaches. Early efforts saw attempts to capture all crosslinguistic difference in clearly defined clusters of properties, each with

[4]The notion of a null subject parameter has been extensively researched and refined. See e.g. Chapter 5 in Guasti (2002) for an overview. See also Kizu (Chap. 3, this volume).

an unambiguous trigger. The earliest example of parameterisation was Rizzi's proposal that the limits on movement due to so-called bounding nodes differ from language to language (Rizzi 1982). Since then, numerous parameters have been put forward to capture crosslinguistic differences, from the aforementioned null subject parameter to the verb movement parameter (Pollack 1989) and the compounding parameter (Snyder 2001), to name a few. As more and more parameters were proposed, Baker (2001), aiming to better explain how a child could work through the maze of parameters, made an ambitious attempt to situate the full set of parameters in binary relationships with each other, proposing a polysynthesis parameter as the most basic parameter. Within Minimalism, a different view of how parameters are instantiated has emerged, following an insight due to Borer (1984), which connects crosslinguistic variation to properties of lexical items. In this view, UG includes a universal inventory of features, and languages differ in terms of which of these features are selected and combined into the given language's lexical items. Despite these different approaches to parameters (i.e. as customisable rules within the grammar in Principles and Parameters, but as assemblies of features on lexical items within Minimalism), there remains consensus on the underlying premise that parameters are needed in order to capture the reality of crosslinguistic variation. The differences between approaches are limited to questions of the precise mechanisms needed to capture this variation.

Shifts in the mechanisms proposed for parameters parallel other shifts in the technicalities of generative theory while keeping the fundamental basis of the theory intact. For those not actively working within generative theory, the resulting changes to terminology can seem baffling. However, since the basis of the theory remains constant, researchers within the generative framework are able to adopt the latest terminology when the specific linguistic phenomenon at the focus of their work calls for it. The chapters in this volume are typical from this point of view, with some employing terminology associated with earlier theoretical formalisms and some with later. Running through all chapters, however, is a commitment to the basis of the generative paradigm: namely UG as an innate linguistic endowment that constrains language acquisition and can capture crosslinguistic variation in a principled way.

1.2.2 Generative Second Language Acquisition

While the efforts of generative linguists have always centred around the structural properties of the grammar and have been understood to apply to the native language context, there have, for decades, also been generativists researching adult second language development. Thus, a second point that unites the authors in this volume is an assumption of some role for 'acquisition' in second language development, in the sense of developing underlying competence in the target language, which is different from merely 'learning' target language structures. The distinction between acquisition and learning is most often associated with Krashen and his attempts to

make sense of developments in linguistic theory in the context of language teaching (Krashen 1985). As discussed in more detail by Whong (Chap. 12, this volume), the relationship between acquired and learned knowledge within SLA has been for the most part limited to the question of whether learned knowledge can become a part of acquired knowledge (Schwartz 1993). Even for those who hold to the so-called strong interface[5] position between the two types of knowledge, however, there have always been questions of learnability. As clearly laid out by White (2003), the heart of the poverty-of-the-stimulus claim is the mismatch between the input that any learner is exposed to and the ultimate knowledge of language, which extends beyond the input. This mismatch is all the more remarkable when considering not only the intrinsically complex nature of language but also the ambiguous and confusing nature of the input that L2 learners, especially cognitively mature adult learners, are exposed to. From the point of view of GenSLA, this poverty-of-the-stimulus mismatch holds whether one is learning one's first, second or fifth language.[6] And for the second language context, there is the added complexity of an existing, fully developed language. For this reason, attention in early GenSLA research was devoted primarily to questions of parameter resetting and native language transfer.

Advances stemming from more sophisticated understanding of different domains of language—including the theoretical transition from Principles and Parameters to Minimalism—have also led to expansion of the initial focus within GenSLA. Much research in the late 1990s, for example, explored differences in the development of syntax and morphology, with many concluding that there is a 'mapping' problem as learners have to map linguistic features onto particular forms which may or may not resemble those in their native language (e.g. Lardiere 2000). More recent GenSLA research parallels larger trends in generative linguistics, exploring areas of language beyond core competence. Investigation of the relationships between narrow syntax and the domains of discourse/pragmatics has led to the recent Interface Hypothesis (Belletti et al. 2007; Sorace and Filiaci 2006; Sorace and Serratrice 2009) which proposes that constructions that implicate both domains will cause more difficulties for the learner than those that are restricted to one domain of language. Another recent proposal argues that both syntax and meaning are acquirable, in contrast with functional morphology, which is seen as creating a bottleneck for second language acquisition (Slabakova 2008). GenSLA researchers have also begun to direct attention to issues of processing (e.g. Juffs 1998, 2006) and, more recently, neurolinguistics (e.g. Yusa et al. 2011). Concomitant developments have been seen in the data collection methods employed by GenSLA researchers, with moves to incorporate techniques from psycholinguistic research (such as reaction time studies) and language pedagogy (using more contextualised

[5] See Whong (Chap. 12, this volume) for discussion of the different uses of the term 'interface' in generative theory.

[6] See Hawkins (2001) and White (2003) for more explanation of UG and poverty of the stimulus within the context of second language acquisition.

tasks instead of uncontextualised sentence judgement tasks, which have traditionally been common in GenSLA research).[7]

Where this volume diverges from more traditional aims of GenSLA is in its interest in exploring questions of *learning* which result from explicit teaching, in addition to questions of *acquisition*. As we come to understand the precise nature of linguistic phenomena more fully, the burden for the learner is even more clear. For the second language researcher, it is a natural step to ask whether it is possible to appeal to the intellect of the adult learner in order to teach specific properties of language. Until now, most GenSLA researchers have been interested in investigating whether acquisition can eventually occur once there has been enough input, and in exploring corresponding developmental stages and how such development is affected by the existing native language. The contributions in this volume seek to go beyond 'passive' acquisition to explore the role of explicit teaching in second language development. While some chapters explore whether explicit teaching leads to implicit acquisition, others ask whether learned metalinguistic knowledge can lead to improved abilities in comprehending and producing language. The extent to which such abilities might implicate acquired knowledge or learned knowledge remains an open question which requires further consideration.

In exploring questions of acquisition and learning, one central theme of this volume is that decades of research have revealed a large set of very subtle properties of language which should prove useful in aiding teachers to help learners make sense of the language they are learning. It is the understanding of the structural properties of language which sets the generative view apart from those working within the functional or cognitive paradigms. For GenSLA researchers, the cornerstone assumption that language is more than just a list of words, collocations or constructions means that learners must come to know the complex system that regulates grammatical output. For a number of chapters in this volume, one aim is to raise the level of awareness of existing linguistic generalisations as understood by generative theorists for those not working within the generative framework. With increased understanding, teachers will be prepared to teach specific properties of language.

In sum, we identify two key, recent trends within GenSLA. First, the field has expanded its enquiry beyond syntax to other domains such as semantics and discourse, to the interfaces between these domains (see White 2011 for an overview), and to other cognitive factors such as processing. Second, recent GenSLA research has focused increasingly on the question of which linguistic properties are easily acquirable and which are problematic. If particular domains or interfaces beyond syntax are found to be resistant to *acquisition*, the question arises of whether they are also resistant to *learning*. Or, to return to the well-known debate: can learning facilitate acquisition? It seems that now is the time to return to the fundamental question of learning in relation to acquisition. In one way or another, each of the chapters

[7]Many of the test instruments used by GenSLA researchers can be found in the Instruments for Research into Second Language Learning and Teaching (IRIS) database: <http://www.iris-database.org>.

in this volume grapples with this basic question. We conclude this introductory chapter with an outline of the edited volume, providing brief descriptions of each chapter.

1.3 Overview of the Volume

We have organised the volume into three sections, based on the three main ways in which the chapters engage with the challenge of applying GenSLA to classroom language learning. Throughout, we have aimed to present the details of generative linguistic research in terms that make them accessible to language learning researchers and practitioners outside the GenSLA community.

In Part I, *GenSLA Applied to the Classroom*, each of the chapters explores a specific area of grammar in terms of what the implications would be for providing very targeted instructions in the second language classroom. They emphasise the need for highly developed expertise in properties of language by both teachers and materials designers. Most of the chapters in this section also include a discussion of pedagogic materials, identifying a gap in the information teachers are provided with, in terms of accuracy of description for specific linguistic properties. They also echo the theme that GenSLA research can reveal what is acquired effortlessly and thus what may not require support in classroom and explore this in relation to the question of what might be targeted in explicit instruction.

Part II, *GenSLA and Classroom Research*, includes empirical studies conducted in second language classrooms, designed to explore the effectiveness of explicit instruction. They differ from most of the existing research on grammar instruction, however, in that they focus on subtle properties of grammar which are now well known within generative linguistics circles, but are not part of pedagogical grammar and thus not usually known by language teachers. These include poverty-of-the-stimulus phenomena and are all to do with some aspect of semantics. Perhaps because attempts to conduct so-called negative evidence studies are relatively rare within GenSLA research, the overall conclusions are mixed. While the first chapter in this section finds clear support for the benefits of explicit instruction, the latter two are less conclusive. Both of the latter two studies suggest that it is the input that matters when it comes to the acquisition of semantics, leading to further suggestions on how these findings can inform issues of classroom pedagogy.

Part III, *GenSLA, the Language Classroom and Beyond,* extends the implications of GenSLA for language teaching and looks forward, by pointing the way for those interested in understanding the full complexity of language. In doing so, it explores language external factors such as processing, practice and orthography, areas which have not traditionally been the mainstay of generative research. In doing so, this section echoes the theme of the volume which acknowledges the complexity of language, and articulates a vision of engagement between areas of linguistic inquiry beyond what may have traditionally been deemed as 'outside' the concerns of the theory.

The following offers brief descriptions of each chapter within the three parts:

1.3.1 Part I: GenSLA Applied to the Classroom

Joyce Bruhn de Garavito, 'What Research Can Tell Us About Teaching: The Case of Pronouns and Clitics', reviews research on clitics and pronouns, focusing in particular on Spanish. Her chapter begins with a discussion of the current gap between linguistics and pedagogy. She then argues that knowing how language works can give better insight in terms of what to teach and what not to waste time on. This includes a discussion of how learners come to know Spanish pronouns and clitics in developmental stages. Her analysis of Spanish textbooks shows they lack understanding of properties of clitics, thereby limiting the effectiveness of teachers in this domain.

Mika Kizu, 'L2 Acquisition of Null Subjects in Japanese: A New Generative Perspective and Its Pedagogical Implications', explores null subjects, looking specifically at Japanese. The chapter first shows that, while subject–verb agreement appears to play a key role in identification of null subjects in languages like Spanish and Italian, Japanese null subject identification depends either on discourse or on a less well-known form of agreement. She then reports on an investigation into how learners interpret null subjects in Japanese, and she ties the findings of this study to an argument for focus on form instruction as the most effective means of facilitating development of target-like use and interpretation of null subjects.

Tom Rankin, 'Verb Movement in Generative SLA and the Teaching of Word Order Patterns', looks at basic word order, providing an overview of generative accounts of differences in word order between German, French and English. He then reviews GenSLA studies that investigate English word order in learners with German-type or French-type first languages and that show how the word order properties from one's native language can lead to difficulties in acquisition in the second language. This leads him to argue that word order is an area which should be explicitly taught and advocates development of grammatical enquiry skills in learners, through a grammaring approach to teaching.

David Stringer, 'Modifying the Teaching of Modifiers: A Lesson from Universal Grammar', presents research on the acquisition of adjectives and prepositional modifiers, looking at ordering when there are multiple modifiers (e.g. *lovely yellow flowers*, *right back into the trees*). His experimental studies examine whether the ordering needs to be taught or whether learners demonstrate knowledge of universal hierarchies, with reference to different first language backgrounds. His results suggest that a universal syntax of prepositional modifiers is understood by all learners and need not be taught, but that adjective order is more complex: a general distinction between absolute and nonabsolute adjectives is understood at all levels of proficiency, but more fine-grained distinctions, such as opinion>age (e.g. *great new haircut*), are poorly understood even at advanced levels and require targeted instruction.

Elena Valenzuela and Bede McCormack, 'The Syntax-Discourse Interface and the Interface Between Generative Theory and Pedagogical Approaches to SLA', explore the acquisition of topic–comment structures in a bidirectional study of English and Spanish. While learners had no difficulties in placing clitics (as expected from regular explicit instruction), their knowledge about the distinction between overt versus covert clitics and its relation to specific versus non-specific interpretations of the topic element appears to be problematic. The authors propose that knowledge of

the subtle semantic notion of specificity is the key to overcoming such problems and therefore this should be the target of explicit instruction. They also stress that teachers' linguistic expertise in these subtle semantic notions is essential in order to carefully provide input that will help students to connect the correct form to the appropriate interpretation.

1.3.2 Part II: GenSLA and Classroom Research

Makiko Hirakawa, 'Alternations and Argument Structure in Second Language English: Knowledge of Two Types of Intransitive Verbs', addresses a poverty-of-the-stimulus situation that involves the difference between unaccusative and unergative verbs. She carries out some classroom research, finding benefit from explicit instruction in helping learners to overcome overpassivisation errors that have been well documented to occur with intransitive verbs that are unaccusative. This supports her argument that awareness and understanding of the two different types of intransitive verbs is useful to teachers if they are to guide their learners to develop accuracy in their language production.

Kook-Hee Gil, Heather Marsden and Melinda Whong, 'Quantifiers: Form and Meaning in Second Language Development', present research on quantifiers, such as *every* and *any,* arguing that complex aspects of both the meaning and the form of quantifiers can eventually be acquired—even when no direct evidence for the particular phenomenon is available. This sets the context for an empirical study on the effectiveness of explicit instruction on subtle properties of quantifiers. They are not able to find support for the effectiveness of instruction in this domain, but they identify an opportunity for more collaborative work between language pedagogy and GenSLA to overcome specific methodological challenges.

Neal Snape and Noriaki Yusa, 'Explicit Article Instruction in Definiteness, Specificity, Genericity and Perception', focus on the difficult area of articles in English. They report on their experiment in which learners were explicitly taught the properties of definiteness, specificity and genericity in terms of how they map onto article use in English. Learners were also given explicit instruction on the perception of articles in spoken English. The results confirm existing studies in non-instructed settings that show that learners can come to know aspects of articles that relate to specificity. Knowledge of the other subtle properties of articles that were taught, by contrast, continued to cause difficulty. The one place where they found clear improvement was the learners' ability to perceive articles in oral input, highlighting the importance of perception in the development of article knowledge in English.

1.3.3 Part III: GenSLA, the Language Classroom and Beyond

Roumyana Slabakova and María del Pilar García Mayo, 'Whether to Teach and How to Teach Complex Linguistic Structures: Scalar Implicatures in a Second Language', focus on L2 acquisition of meaning. They argue that semantic and pragmatic meanings

are universal and therefore need not be taught. However, when the computation of a particular meaning is complex, due to syntactic complexity or to contextual complexity, the increased processing load means that learners' mistakes increase. They show that practice increases ease of processing, and they illustrate how some of the innovative language tasks designed for GenSLA data collection could be used as classroom practice activities.

Martha Young-Scholten, 'Great Expectations in Phonology? Second Language Acquisition Research and its Relation to the Teaching of Older and Younger Learners', extends the scope of the volume to the important domain of phonology. She does so by drawing parallels with the widely accepted generalisations articulated by Lightbown (1985) that are typically thought about in terms of morphosyntax. After providing a comprehensive survey of research on second language phonology in terms of the traditional concerns of universal constraints and native language transfer, she focuses on age, looking at classroom research conducted in a primary school context. This leads to the conclusion that the nature of input is crucial, both in terms of aural and orthographic input. She concludes by highlighting the need to research external variables such as identity in terms of the effects on the development of language structure.

Melinda Whong, 'Applied Generative SLA: The Need for an Agenda and a Methodology', concludes the volume with a discussion of a way forward for GenSLA. She proposes an agenda which includes developing teacher expertise, communicating research findings and reconsidering the concepts of acquisition and learning. This provides the basis for her argument that questions of learning, and by extension explicit instruction, should now be included in the GenSLA research paradigm as an area worth exploring. The suggestion is that GenSLA should work in collaboration with researchers already engaged in classroom research, albeit from within other linguistic paradigms, so as to achieve more coherence in the field of second language acquisition.

In sum, the volume covers a broad range of topics, in terms of linguistic phenomena as well as pedagogical approaches. We hope it will be of use to researchers from both GenSLA and instructed SLA traditions, who are open to a new, collaborative perspective. Indeed, we hope that the volume will trigger advances in interdisciplinary research between the two traditions. The collection could also be used as a textbook in advanced undergraduate- and postgraduate-level courses on second language acquisition and applied linguistics.

References

Baker, M. 2001. *The atoms of language: The mind's hidden rules of grammar*. New York: Basic Books.

Belletti, A., E. Bennati, and A. Sorace. 2007. Theoretical and developmental issues in the syntax of subjects: Evidence from near-native Italian. *Natural Language and Linguistic Theory* 25: 657–689.

Block, D. 2003. *The social turn in second language acquisition*. Edinburgh: Edinburgh University Press.

Borer, H. 1984. *Parametric syntax: Case studies in Semitic and Romance languages*. Dordrecht: Foris.
Brumfit, C. 1991. Applied linguistics in higher education: riding the storm. *BAAL Newsletter* 38: 45–49.
Chomsky, N. 1957. *Syntactic structures*. The Hague: Mouton.
Chomsky, N. 1981. *Lectures on government and binding theory*. Dordrecht: Foris.
Chomsky, N. 1995. *The minimalist program*. Cambridge, MA: MIT Press.
Cumming, A. 2008. Theory in an applied field. *TESOL Quarterly* 42: 285–291.
Fasold, R.W., and J. Connor-Linton. 2006. *An introduction to language and linguistics*. Cambridge: Cambridge University Press.
Firth, A., and J. Wagner. 1997. On discourse, communication, and (some) fundamental concepts in SLA research. *The Modern Language Journal* 81: 285–300.
Guasti, M.T. 2002. *Language acquisition: The growth of grammar*. Cambridge MA: MIT Press.
Hawkins, R. 2001. *Second language syntax: A generative introduction*. Oxford: Blackwell.
Juffs, A. 1998. Some effects of first language argument structure and morphosyntax on second language sentence processing. *Second Language Research* 14: 406–424.
Juffs, A. 2006. Processing reduced relative vs. main verb ambiguity in English as a second language: A replication study with working memory. In *Inquiries in linguistic development in honor of Lydia White*, ed. R. Slabakova, S. Montrul, and P. Prevost, 213–232. Amsterdam: John Benjamins.
Katamba, F., W. O'Grady, and J. Archibald. 2011. *Contemporary linguistics: An introduction*, 2nd ed. London: Longman.
Krashen, S. 1985. *The input hypothesis: Issues and implications*. London: Longman.
Lardiere, D. 2000. Mapping features to forms in second language acquisition. In *Second language acquisition and linguistic theory*, ed. J. Archibald. Oxford: Blackwell.
Lightbown, P. 1985. Great expectations. Second-language acquisition research and classroom teaching. *Applied Linguistics* 6: 173–189.
Long, D., and J. Rothman. 2013. Generative approaches and the competing systems hypothesis: Formal acquisition to practical application. In *Theoretical and pedagogical innovations in SLA and bilingualism*, ed. J. Schweiter. Amsterdam/Philadelphia: John Benjamins.
Piske, T., and M. Young-Scholten. 2009. *Input matters in SLA*. Bristol: Multilingual Matters.
Pollack, J.Y. 1989. Verb movement, universal Grammar, and the structure of IP. *Linguistic Inquiry* 20: 365–424.
Rizzi, L. 1982. *Issues in Italian syntax*. Dordrecht: Foris.
Rothman, J. 2008. Aspectual selection in adult L2 Spanish and the competing systems hypothesis: When pedagogical and linguistic rules conflict. *Languages in Contrast* 8: 74–106.
Rothman, J. 2010. Theoretical linguistics meets pedagogical practice: Pronominal subject use in Spanish as a second language (L2) as an example. *Hispania* 93: 52–65.
Schwartz, B.D. 1993. On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition* 15: 147–163.
Slabakova, R. 2008. *Meaning in the second language*. Amsterdam: John Benjamins.
Snyder, W. 2001. On the nature of syntactic variation: Evidence from complex predicates and complex word-formation. *Language* 77: 324–342.
Sorace, A., and F. Filiaci. 2006. Anaphora resolution in near-native speakers of Italian. *Second Language Research* 22: 339–368.
Sorace, A., and L. Serratrice. 2009. Internal and external interfaces in bilingual language development: Beyond structural overlap. *International Journal of Bilingualism* 13: 1–16.
Stern, H.H. 1983. *Fundamental concepts of language teaching: Historical and interdisciplinary perspectives on applied linguistics research*. Oxford: OUP.
White, L. 2003. *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.
White, L. 2011. Second language acquisition at the interfaces. *Lingua* 121: 577–590.

Whong, M. 2011. *Language teaching: Linguistic theory in practice*. Edinburgh: Edinburgh University Press.

Yusa, N., M. Koizumi, J. Kim, N. Kimura, S. Uchida, S. Yokoyama, N. Miura, R. Kawashima, and H. Hagiwara. 2011. Second-language instinct and instruction effects: Nature and nurture in second-language acquisition. *Journal of Cognitive Neuroscience* 23: 2716–2730.

Part I
GenSLA Applied to the Classroom

Chapter 2
What Research Can Tell Us About Teaching: The Case of Pronouns and Clitics

Joyce Bruhn de Garavito

2.1 Introduction

Most textbooks for the teaching of Spanish include a section or sections for instruction on object pronouns, and this at each and all levels. This is particularly the case with North American Spanish textbooks that generally try to combine traditional and communicative practices. As we shall see in detail below, in most texts we find a short explanation of what direct objects and/or indirect objects are, followed by the pronominal forms that fulfil these grammatical roles, with explanations regarding all their possible positions in the sentence. Finally, the learners are given practice exercises, which can vary from quite repetitive to relatively communicative. Students find the learning of object pronouns quite frustrating, and they often express difficulty in understanding the difference between direct and indirect objects. However, we, as language teachers, seldom stop to wonder if what we find presented in our texts is the best way to approach the problem or whether we should reconsider the how, the when and the why of object pronoun teaching.

In their seminal paper, Canale and Swain (1980; see also Hymes 1972; Canale 1983; Savignon 1983) argued that the goal of language teaching was not simply linguistic competence but rather communicative competence, which not only includes linguistic competence but also discourse, sociolinguistic and strategic competencies. It sometimes seems that this has led to a certain disregard for linguistic competence among some scholars, with a greater emphasis given to social aspects of the learning experience (see e.g. Lantolf 2000). However, at least since Lightbown and Spada (1990) and Long (1991), it has been suggested that some attention should be given to form. A distinction was made between 'focus on form' and 'focus on formS' (Long 1991). 'Focus on form' consists in drawing the learners' attention to

J. Bruhn de Garavito (✉)
Department of Modern Languages and Literatures, University of Western Ontario, London, ON, Canada
e-mail: joycebg@uwo.ca

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_2,

a particular linguistic element, including its meaning, in the course of communicative activities. 'Focus on formS', in contrast, corresponds more or less to 'traditional' methods as opposed to communicative practice, in which a series of discrete rules are taught in separate lessons following a predetermined order. Although the 'focus on form' 'focus on formS' distinction has often been seen as a dichotomy, a review of the existing literature leads to the conclusion that it is rather a continuum, from those advocating teaching grammar separately and then trying to integrate this knowledge into communicative practice (DeKeyser 1998) to those who believe corrective feedback should be kept at a minimum (Doughty and Varela 1998) (see Sheen 2002 for a review of this debate).

In spite of the many developments in the area of language teaching in recent years (e.g. communicative approaches), we must not forget that linguistic competence is still one of the main supporting columns in the building of knowledge of a second language, perhaps not the only one, but an important one nevertheless. For this reason a strong foundation in empirical research in this area is important. The problem is that a great deal of the recent research on the acquisition of grammatical principles has been conducted by theoretical linguists working within the generative framework. Many applied linguists and language specialists avoid examining this stream of work for many reasons, one of which is that they believe it has nothing to tell them. As early as 1985, Lightbown (1985) addressed the chasm that was opening between second language acquisition research and applied linguistics, and this division has sometimes become quite acrimonious (see the discussions between Lantolf (1996, 2002) and Gregg (2000, 2002) for example, or Gregg's (2006) critique of Watson-Gegeo (2004)). The aim of this chapter (and this book) is to bridge this divide. I will argue that, in spite of the differences in outlook, generative linguistics has a lot to offer applied linguists, teachers, curriculum designers and textbook authors.

The dialogue between these two approaches may begin with learnability. All of us can agree that learnability (perhaps acquirability is a better word) is fundamental not only to theoretical issues related to the structure of the mind/brain and of language itself but also to practical language teaching. Nobody would waste time teaching what the learners are not yet ready to acquire at a given stage in the development of a second language or using certain methods. Learnability can be interpreted as the possibility of building underlying structure on the basis of input alone, input that can be messy and confusing at the same time as it fails to adequately represent the grammar. We know that children's acquisition of their first language is effortless, although we disagree on the mechanisms that may make this possible. The question of second language (L2) acquisition (and subsequent languages) is far more complex. Both generativists and applied linguists have asked in what ways L2 acquisition may differ from L1 acquisition. Is there some fundamental difference between infants and mature individuals, differences based perhaps on the structure of the mind/brain (Lenneberg 1967; Johnson and Newport 1989; Eubank and Gregg 1999; among others), or are the different outcomes we often find in L2 due to other factors (Bialystok and Hakuta 1999; Birdsong 1999)? The answer to this question should have important consequences for the classroom. The theoretical underpinnings of

a communicative approach lie in the assumption that natural input, such as a child receives, is essential for language to develop. Overt teaching of grammar is, under this assumption, unlikely to affect a change in the mental grammar of learners. Suppose, however, that adults do differ in fundamental ways from child learners (Bley-Vroman 1989). It may be the case, then, that grammar explanations are far more efficient at affecting learners' interlanguage, because in this way learners will be able to use different resources to acquire communicative skills in the second language, such as applying metalinguistic knowledge and self-monitoring (Krashen 1977). Choosing between 'focus on form' or 'focus on formS' is thus directly related to the problem of learnability.

There are two factors directly related to learnability that we will consider here: the nature of the input the learner receives and transfer from the first language. Input is critical because the differences between first and second language acquisition may be due to insufficient input, to unavailability of the crucial input or to the wrong type of input. Any or all of these could lead to all or parts of the grammar not being learnable. Transfer also impinges on learnability because the effect of the first language on the second could act as a barrier to acquisition. Both of these factors constitute common ground for generative linguists and applied linguists.

Regarding input, a basic tenet of generative linguistics is that the string of speech (or the written text) the learner hears does not provide adequate information for the building of a grammar, in other words, natural language input may be necessary but not sufficient for acquisition to take place. We say that the input underdetermines the grammar, and therefore we need some form of innate principles that will prevent the learners from making impossible hypotheses. But if natural language input is not sufficient, what happens when natural language is complemented by some form of explicit input, in the sense not only of grammar correction but also of explanations? Some scholars, although not all, argue that it has no effect whatsoever (see Schwartz 1993), a position shared by many applied linguists and teachers. This directly impacts the type of methodology we use, as the debate about 'focus on form' or 'focus on formS' shows.

Transfer has been the source of countless debates among both applied and generative linguists (Weinreich 1953; Zobl 1980; Andersen 1983; Schwartz and Sprouse 1997; among countless others). It is important because it points to a possible fundamental difference between L1 and L2 acquisition. Second language learners have already acquired a language while L1 learners have not. Are learners able to acquire properties not present in the first language? Is transfer a permanent characteristic of the interlanguage (Selinker 1972)? If it is, then we as teachers should be looking for ways to compensate.

The issue of Spanish object pronouns is a good place to establish a dialogue for several reasons. English object pronouns behave in a very different fashion from Spanish pronouns, and these in turn share some similarities but are not identical to French object pronouns. So we may ask the fundamental question of whether these pronouns, with different properties, are learnable. We may also ask whether transfer from the L1 plays a role in the acquisition of these elements. Finally, we may ask about the role of the input in the acquisition of these pronouns, both natural and explicit.

In this chapter, I will first describe the data regarding object pronouns in Spanish. To be able to clearly understand the difficulties the learner faces, I will compare with other languages such as French and English. I will then examine results of several studies carried out with theoretical questions in mind in order to show how they can inform language teaching. I will compare what is actually done in class with what the interpretation of these results may tell us about how best to guide the learner toward acquisition. The objectives of this article are therefore twofold: to serve as a resource for language teaching professionals on the one hand and to show that it is imperative that theoretical and applied linguists should listen to each other.

2.2 Object Pronouns in Spanish

Even at the descriptive level, a great deal of our understanding of object pronouns in Romance comes to us from generative linguistics (Kayne 1991; Roberge 1990; Uriagereka 1995; Heap 2000; Cuervo 2002). I will present the data in an organized fashion, in a similar way to how some textbooks do this. However, we must keep in mind that the 'natural' input the learner receives is much messier than this. Even excluding the errors classmates may commit, typical speech will include pronouns that follow and precede the verb; pronouns that include person, number and gender agreement, some that include only number agreement and some that only include person; and pronouns that double a full noun phrase (NP) or a full pronoun, and pronouns that do not. Furthermore, if learners are in contact with speech from different regions in the Hispanic world, they will face a great deal of sociolinguistic variability and, in fact, in many cases, they will receive input that contradicts some of what they have been taught in their Spanish courses. It is astounding that learners are actually able to somehow acquire the basic knowledge necessary to speak Spanish, and yet, as we shall see, many learners do.

Linguists generally refer to pronouns in English as full pronouns. Full pronouns appear in the same position as objects represented by nominal phrases (NPs), that is, in the position in which we expect to find a direct object argument of the verb. For example, in (1) we find that the direct object of 'buy' directly follows the verb both when it is an NP and when it is a pronoun.

1. a. I bought **a blouse**.
   b. I bought **it**.

Unlike English, Spanish has both full pronouns and clitics.[1] Clitics are pronouns that must attach to a host, in Spanish the verb, and therefore do not necessarily appear in argument position, as shown in (2). In (2a) we see that, as in English, the direct object NP follows the verb. However, (2b) shows us that when we replace the

[1]English is said to have clitics at the phonological level, for example, when we say 'I saw'em'. However, unlike Spanish, in English this process does not affect the syntax.

object with a clitic pronoun, it precedes the verb, and (2c) shows us that in modern Spanish the opposite order is not grammatical.

2. a. Compré **una blusa**.
   bought-I a blouse
   'I bought a blouse.'
   b. **La** compré.
   it bought-I
   'I bought it.'
   c. *Compré **la**. (=(2b))
   bought-I it

The situation becomes more complicated when we consider non-finite verbs such as infinitives or present participles. If the non-finite verb is not accompanied by a conjugated verb, as shown in (3a, b), the clitic pronoun obligatorily follows the verb. If, however, there is a main verb, the learner is presented with a choice, the clitic may precede the main verb (3c) or it may follow the non-finite verb (3d). It cannot, however, be placed between the verbs (3e). Furthermore, although this is never presented in textbooks, the option illustrated in (3c) is not possible with all verbs, only with a subset we refer to as restructuring verbs. The example in (3f) is ungrammatical with the verb *resolver* 'to decide', the only option in this case is for the clitic to follow the non-finite verb (3g).[2]

3. a. Para comprar**la**.[3]
   for buy-it
   'In order to buy it.'
   b. *Para la comprar. (=(4a))
   c. La quiero comprar.
   it want-I buy-infin.
   'I want to buy it.'
   d. Quiero comprarla. (=(4c))
   want-I buy-infin.-it
   e. *Quiero la comprar. (=(4c))
   want-I it buy-infin.
   f. *La resolví comprar.
   it decided-I buy-infin.
   'I decided to buy it.'
   g. Resolví comprarla. (=(3f))
   decided-I buy-it

We do not refer to these pronouns with the name of clitics to cause confusion or create more jargon; there are fundamental differences between them and full

[2]I will not even touch on imperatives, which add more complications.
[3]The clitic is usually spelled as a separate word when it precedes the verb and as attached to the verb when it follows. This is simply an arbitrary convention.

pronouns. In Spanish, clitics are referred to as *pronombres átonos*, that is, unaccented pronouns, because they cannot be stressed, unlike English pronouns, as shown in (4a) for both languages. Furthermore, clitics, unlike English pronouns, cannot be conjoined (4b) and they cannot appear alone (4c) or as the object of a preposition (4d).

4. a. *__LO__ vi.
   'I saw __HIM__.'
   b. *Lo y la vi.
   'I saw him and her.'
   c. –¿A quién viste? –*Lo.
   'Who did you see?' 'Him.'
   d. –¿Para quién es el libro? –*Para lo.
   'Who is the book for?' 'For him.'

In this chapter, we will be focusing mainly on the position of clitic pronouns, but the position is not the only factor that makes the input learners receive confusing. There is a lot the learner has to digest, particularly when coming from a language such as English. In English, a pronoun generally has the same form whether it represents a direct object or an indirect object ('I saw him'; 'I spoke to him'.). That is the situation for first and second person pronouns in Spanish too (*María* ***me*** *ve* 'María sees me'; *María* ***me*** *habla* 'María speaks to me'). However, in principle, third-person clitics differ depending on whether they represent a direct object (5a) or an indirect object (5b), and if they represent a direct object, they will also have gender features.

5. a. Lo vi/La vi/Los vi/Las vi.
   him saw-I/her saw-I/them-masc saw-I/them-fem saw-I
   'I saw him.'/'I saw her.'/'I saw them.' (masc.)/'I saw them.' (fem.)
   b. Le hablé/Les hablé.
   him/her spoke-I/them spoke-I
   'I spoke to him/her'/'I spoke to them.' (masc. and fem.)

The input will also show that the indirect object clitic changes form when it appears with an accusative clitic of the third person, as shown in (6). In (6a), the clitic representing 'to him' is formulated in the same way as in (5). However, in (6b), because of the presence of the direct object *lo*, it surfaces as *se*.

6. a. **Le** di el libro.
   him/her gave-I the book
   'I gave the book to him/her.'
   b. **Se** lo di.
   him/her it gave-I
   'I gave it to him.'

Many of the descriptive facts illustrated above (the position of clitics, the problems with gender and type of object) are generally explicitly taught in Spanish classes. However, there is a high level of sociolinguistic variation in the use of

these elements. Some of this variation is accepted by the language academies; other types are supposed to represent 'less educated' speech. But this variation is common, and it is quite possible, even probable, that a learner that explores the Hispanic world will come across it. An example of 'acceptable' variation, the use of the indirect object form for the direct object form, is shown in example (7), taken from a well-known Spanish author. One can see that the direct object clitic 'him' appears in the first clause as *le* and in the second as *lo*. This example shows that this variation is found not only across regions and social classes, which it is, but also in the speech of the same speaker. The example in (8) shows a form the language academies accept to a lesser degree. It consists of the use of the feminine direct object clitic instead of the indirect, which should have no gender, in other words, speakers use *la* when the expected form would be *le*. This variant is commonly used in the region of Madrid by people of all levels of education. For a review of this and other variation in the use of clitics, see Heap (1996) and Bleam (1999).

7. Se quedó mirándo**le** sin atreverse a despertar**lo** (Roa Bastos, Spanish author, cited in (Alarcos Llorach 1994): 203).
   refl remained-he regarding-him without daring-refl to wake-him
   'He remained looking at him without daring to wake him.'
8. **La** dije que llegaban a las tres (**Le** dije que llegaban a last tres =standard).
   her told-I that arrived-they at the three
   'I told him/her that they arrived at three.'

There is a final type of variation that learners have to contend with. Spanish is a clitic-doubling language, that is, there are many occasions in which the clitic and the object it represents appear at the same time, along the lines of 'I said to her to Mary'. There are contexts when the object must be doubled by a clitic, contexts where it is almost always doubled by a clitic and contexts where in standard Spanish it should not be doubled but it very often is, again subject to sociolinguistic variation. In (9a) we find both the clitic and a full pronoun to refer to the same direct object, a construction that is often used when we wish to draw the hearer's attention to the object. The clitic in these cases is obligatory. In other words, as the example shows, you cannot simply say the equivalent of 'I saw him', if you use the full pronoun you have to say 'I him saw HIM'. In (9b) we find an indirect object noun phrase, and this noun phrase is almost always doubled by a clitic in almost all regions and by all social classes, although grammar books still say this doubling is optional. That is, most Spanish speakers say the equivalent of 'him I gave the book to him'. Sentence (9c) illustrates a full noun phrase in direct object position that, in standard Spanish, is not doubled. However, with certain restrictions, it is commonly doubled in River Plate Spanish (Suñer 1988). In Argentina and Uruguay, you will commonly hear sentences such as (9d) which are the equivalent of saying in English 'I her saw María'. With fewer restrictions this sort of sentence can be found in many places where Spanish is in contact with other languages (including our Spanish L2 classes).

9. a. Lo vi a él/*Vi a él.
   him saw-I to him
   'I saw him.'
   b. Le di el libro a él/?Di el libro a él.
   him gave-I the book to him
   'I gave the book to him.'
   c. Vi a María.
   saw-I a María
   'I saw María.'
   d. La vi a María.
   her saw-I a Mary
   'I saw María.'

Although I have been speaking of indirect object pronouns as if they always replaced indirect objects, this is not the case. For example, in (10a) the indirect object clitic *le* is referring to a place (a locative), in (10b) it represents possession, and in (10c) origin. In all these sentences the pronoun is obligatory (Masullo 1992; Bruhn de Garavito 2006). This is also a wrinkle learners will have to deal with.

10. a. **Le** puse un mantel **a la mesa**. (*Le* refers to the table.)
    it put a tablecloth to the table
    'I put the tablecloth on the table.'
    b. **Le** lavé las manos **al niño**. (*Le* refers to the child.)
    him washed the hands to the child
    'I washed the child's hands.'
    c. **Le** heredé la nariz **a mi abuela**. (*Le* refers to the grandmother.)
    her inherited the nose to my grandmother
    'I inherited my nose from my grandmother.'

To summarize, the 'natural' input the learner may receive is quite complex, with a great deal of variation at different levels, including the position of clitics and the shape they take depending on factors such as person, gender, number and function in the sentence and sociolinguistic factors related to region, education and social class. Somehow, learners have to extract from this mass of data key elements about the nature of clitics and how they differ from full pronouns in both English and Spanish[4]. There is still a great deal to be researched. However, there are certain predictions that we may hazard regarding the acquisition of Spanish clitics.

The first prediction is that, as soon as learners notice the position of the object clitics in contrast to the position of full pronouns or noun phrases, they will (unconsciously) realize that these are not full pronouns and properties such as the inability of these elements to carry stress, to be conjoined or to appear in isolation should fall out naturally. In other words, the position, however we teach it, is

[4]The position of both conjugated and non-finite verbs in different languages is also very important, but it is beyond the scope of this chapter.

evidence learners may use to arrive at the correct analysis of Spanish grammar. However, the clitic nature of Spanish object pronouns does not explain the position of these elements when you have a conjugated verb (particularly a modal) and an infinitival (or present participle), as seen in (3), repeated here as (11) for convenience. French also has clitics and yet it does not have the options Spanish allows, as shown in (12).

11. a. La quiero comprar.
    it want-I buy-infin.
    'I want to buy it.'
    b. Quiero comprarla. (=(4c))
    want-I buy-infin.-it
12. a. Je veux **l**'acheter.
    I want it to buy
    'I want to buy it.'
    b. *Je **le** veux acheter. (OK in Spanish) (=(12a))
    I it want to buy.
    c. *Je veux acheter-**le**. (OK in Spanish) (=(12a))
    I want to buy-it.

Spanish allows the clitic pronoun to appear before the main verb because it also allows a process generally referred to as restructuring. In restructuring, the two verbs, the main, conjugated verb, and the infinitive come together to form a unit. However, restructuring is optional, it is also possible to construct a sentence in which, at the underlying level, the two verbs function as separate units. Therefore, the position of the pronoun is evidence for whether restructuring has taken place or not. If the pronoun precedes the main verb, the two verbs are functioning as a unit; if it appears after, they do not. French, from the evidence given above, does not allow restructuring.

Now we can make a second prediction regarding the acquisition of clitic pronouns in Spanish. It is possible to acquire the clitic nature of these pronouns without acquiring restructuring because these two grammatical properties of Spanish are not necessarily linked. As we saw for French, one property can exist in a language without the other. We can therefore predict that learners may know clitics but not know restructuring or vice versa, depending on other factors. In particular, we could ask which of the two properties may be acquired first: the nature of clitics or restructuring. According to generative theories, Universal Grammar allows languages the option of including full pronouns and/or clitics and also the separate option of allowing restructuring or not. Knowledge of these possibilities is what we assume the learners bring to the task of acquiring the Spanish pronoun system. However, in both cases, learners have to notice something in the input that triggers the appropriate analysis. This is the interplay between nature and nurture. Tentatively I would like to propose that the position of clitics, preceding conjugated verbs instead of following as would be the case for a full pronoun or noun phrase, serves as a trigger that allows learners to infer from the input the fact that Spanish chooses the option

Table 2.1 Predictions on the order of acquisition of clitics

Position in relation to verb	Example	Relative timeline
Clitic + conj. V	**Lo** vi 'I saw him'	Relatively early
Main V + infin. V + clitic	Puedo ver**lo** 'I can see him'	Relatively early
Clitic + main V + infin.	**Lo** puedo ver 'I can see him'	Later

of including clitics (and full pronouns, although this is not an issue here). The evidence in the input for restructuring is a bit less straightforward because of the optionality in the position of the clitic. It can either remain in the embedded clause and be pronounced in the position in which we would expect the object argument to appear, or it can appear structurally quite far from the non-finite form, before the conjugated verb. This variation brings with it no change in meaning. Unless learners have concluded that restructuring is possible in Spanish a priori, they may not notice the clitic before the finite verb in what is after all an unexpected position. It is therefore possible that this particular position may turn out to be more difficult. Table 2.1 summarizes these predictions.

These are important, testable predictions regarding the acquisition of the position of clitics. In the next section, we will examine some of the results of research that provide evidence for the accuracy of these predictions.

2.3 Research on the Position of Clitics

We do not have a complete understanding of the development of clitics in second language grammars over time. It is possible, indeed probable, that at the beginning stages learners will assume (unconsciously) that object pronouns behave in Spanish as they do in English (Schwartz and Sprouse 1996). They will therefore expect to encounter pronouns in the position of the object, where they will not find them. Recall that these are elements that are not salient because, although frequent, they are not stressed and they cannot appear alone. In fact, it is possible learners do not hear them in the beginning stages, in the sense that they are not aware of their presence.

If learners do not acquire object clitics because they do not notice them, one would predict a stage in which they assume Spanish allows null objects, that is, it is not obligatory to express the object, perhaps because it is recoverable from the discourse, as in Chinese. This is particularly so as Spanish does indeed allow null objects in very specific circumstances (see Campos 1986), so some of the natural input would point in this direction. However, this stage has not been found.

Zyzik (2008) examined object DPs in a grammaticality judgement task and four production tasks completed by English L1 learners of Spanish L2 at four different proficiency levels. Very few null objects were found in production, and these diminished in frequency as a function of the level of the learners. However, the author shows how the reduction in number of null objects correlates with the

Table 2.2 Production task: 4,070 direct object contexts (Zyzik 2008: 87)

	Beginners ($n=12$)	Low intermediate ($n=12$)	High intermediate ($n=12$)	Advanced ($n=14$)
Lexical NP	91.6 %	82 %	73 %	72 %
DO clitic	0.6 %	8.8 %	18 %	22.5 %
Null object	3.7 %	4.5 %	3.0 %	1.2 %
Other	4.1 %	4.7 %	6.0 %	4.3 %

more frequent use of clitics. This last is made particularly clear in the grammaticality judgement task.

What kind of null objects did Zyzik find? Most of them are in contexts in which the meaning is recoverable from the context, such as in conjoined actions or in answers to questions in which the object is already present. At the same time, there were a higher number of omissions with verbs that generally take a locative and an object, such as *poner* 'to put' and *echar* 'to throw'. Finally, most null objects referred to inanimate objects. These factors led the author to argue convincingly that the problem is not at the level of the unconscious grammar but rather a problem with processing. In other words, learners, at least at the time they were tested, did not assume Spanish was a null object language, but when the processing weight was higher, they had more difficulty. For example, if the verb belongs to the class that takes both a direct object and an obligatory locative, the sentence becomes more complex and short-term memory limitations may make processing difficult. Table 2.2 shows the results of the production task (adapted from Zyzik 2008). As we can see, not only did the number of null objects, few to begin with, go down as the number of clitics went up, but also the number of full noun phrases went down.

Bruhn de Garavito and Montrul (1996) was one of the first studies to examine the acquisition of the placement of clitics. Theirs was a bidirectional study that looked at the acquisition of French clitics by Spanish L1 speakers and the acquisition of Spanish clitics by French L1 speakers. As was briefly mentioned above, French behaves like Spanish in the case of conjugated verbs but differs in the case of infinitives. Clitics precede infinitives in French (*pour* ***le*** *faire* 'to do it') but follow in Spanish (*para hacer****lo***). For generativists this is evidence the infinitive is in a different position in French and in Spanish (Kayne 1991). Furthermore, as we mentioned, French does not allow restructuring, so when there is a main verb and an infinitive, the clitic appears between the two (*Je veux* ***le*** *faire* 'I want to do it'), in contrast to Spanish in which this is the one position that is disallowed.

Bruhn de Garavito and Montrul (1996) used a production task and a grammaticality judgement task. In the production task, the participants, who had acquired Spanish in a university formal setting, were shown sentences in which a noun was repeated. They were asked to replace the second mention by a pronoun. Because this test is very similar to the type of exercises completed in formal classrooms, the objective was simply to make sure the learners were familiar with clitics and their position when given the time to think about it. The results were very good, and any

learner who did not pass this test was excluded from the final task. The grammaticality judgement task[5] was presented in both a written and an oral version but only the results of the written task were published. In the written form the participants read a series of sentences and were asked to indicate whether they were possible or impossible sentences in Spanish or French. The sentences were divided in 12 types, 6 grammatical and 6 ungrammatical, that tested the different possible positions for the clitic.

Not surprisingly, the L2 learners of Spanish did very well on this task in the case of conjugated verbs; in other words, they correctly accepted sentences in which the clitic preceded the verb and rejected those in which it followed. This could be explained by their knowledge of French. However, they also did well on sentences with infinitives in two particular cases: when the infinitive appeared alone (*para hacerlo* 'to do it') and when the order was verb infinitive clitic, both positions that are disallowed in French. They also correctly rejected the order verb clitic infinitive, which is the order found in their L1. In other words, they were able to move away from French. For linguists this was evidence that they knew two things: they knew that object pronouns were clitics that attach to the verb and they knew that infinitives behaved in a different way in the two languages. However, they often rejected as ungrammatical sentences in which the clitic precedes the main verb in Spanish (***Lo*** *quiero hacer* 'I want to do it').

Duffield and White (1999) examined the acquisition of clitics by English and French learners of Spanish as a second language[6]. The learners, who had learned Spanish in a classroom setting, were at two levels, intermediate and advanced. This study also included a grammaticality judgement task in which the participants were asked to correct sentences they found ungrammatical in Spanish. This task was complemented by an on-line sentence-matching task, an innovative approach to try to determine what the underlying grammar of a speaker is. In this task learners are presented with two sentences, and they are asked to indicate by pressing a button as quickly as possible whether they are the same or different. Half the sentences were grammatical, half were ungrammatical. The idea behind this methodology is that people are quicker to judge grammatical sentences than ungrammatical ones, in the same way as it is easier to judge whether two words are the same if they are real words than if they are not (*house* compared with *house*, as opposed to *hseou* compared with *hseou*). The speed of the responses would be faster for grammatical sentences than for ungrammatical ones.

Results of this new study were quite similar to those of Bruhn de Garavito and Montrul on the grammaticality judgement task. Furthermore, the learners often corrected the order clitic verb infinitive to verb infinitive clitic. As to the sentence-matching task, as expected, most participants took longer to judge ungrammatical

[5]We will be reporting here only the results that are relevant for this chapter. Bruhn de Garavito and Montrul (1996) also looked at adverb placement and infinitives in indirect questions.

[6]Many of these learners were actually learners of Spanish as a third language, but at the time this research was conducted, this was not seen as a concern.

sentences. They were also slower at judging restructuring sentences in which the clitic appears above the main verb when followed by an infinitive. Interestingly enough, native speakers were also slightly slower on this order, but not as slow as for ungrammatical sentences.

To summarize, there are three main striking results. The first is that learners may be able to place clitics correctly in a traditional task, such as replacing a repeated noun by an object pronoun, while at the same time showing a different pattern of responses in a more demanding task such as a grammaticality judgement task or a sentence-matching task. The second is that, in fact, learners are able to acquire the clitic-like properties of object pronouns in languages such as Spanish at least by the intermediate stage, both when their L1 exhibits this type of elements (e.g. French) as when it does not (e.g. English). The third is that there is one area that is particularly problematic for learners, that is, the position of clitics before the main verb. Recall that we have argued that this position is possible because of restructuring, the coming together of two categories into one. Even the more advanced learners had difficulty with this, rejecting this type of sentences as ungrammatical. These three points may inform our language teaching, and some suggestions as to how this knowledge may be applied will be the focus of the next section.

2.4 Application to Language Teaching

In the first part of this chapter, I argued that language pedagogy experts, applied linguists and theoretical linguists have certain interests in common, although we may each approach the issues from a different perspective. This shared work space makes cross-pollination a useful tool. In this chapter, we have focused on clitics. Theoretical linguists are interested in clitics because, among other things, they constitute a fertile ground for researching whether learners are able to go beyond the rules of their first languages or whether there are permanent deficits in adult second language acquisition. This in turn will help us understand how language in the mind/brain works. However, results of research carried out with rather abstract questions in mind can inform the curriculum designer, the textbook writer and the language teacher because questions of learnability and the importance of the input, including explicit and implicit input, can help lay the groundwork for a methodology that has strong empirical foundations at least regarding the acquisition of grammar, although they will have nothing to say regarding other issues such as the social context of learning, the role of culture or identity.

Before we apply what we have learned, however, I would like to examine what current textbooks do because they will give us some indication of what goes on in the classroom. In order to do this, I have reviewed around 15 textbooks commonly used in North America, designed to teach beginning and intermediate level students. I will focus for my examples on two of these, both used as introductory texts, not because I wish to criticize them but because they appear representative of all the other textbooks I looked at. Furthermore, they are both recent and used in many

universities and colleges across North America. They are 'Hola Amigos' (Jarvis et al. 2012) and Vistas (Blanco and Redwine Donley 2005).

Every textbook examined teaches all the positions of clitics at the same time, in the beginning level. However, they separate the clitics according to whether they are direct or indirect objects. Direct objects are generally taught in an earlier chapter, around chapters 4 or 5, while the present tense is still being taught. Clitics that refer to indirect objects appear later, often in the following chapter and often at the same time as the regular simple past, with a subsequent chapter presenting the use of two clitics together. In other words, object pronouns are taught very early on.

The manner of presentation is usually very similar. First, we find an explanation as to what a direct (or indirect) object is, often with examples in English or English and Spanish. The following are the types of explanations given: 'A direct object noun receives the action of the verb directly and generally follows the verb' (Vistas 2005, 156). 'In addition to a subject, most sentences have an object that directly receives the action of the verbs' (Hola, Amigos, 133). 'Indirect objects are nouns or pronouns that receive the action of the verb indirectly' (Vistas, 180).

After explaining what a direct object is, the chapter proceeds to explain what a pronoun is: 'Direct object pronouns are words that replace direct object nouns. Like English, Spanish sometimes uses a direct object pronoun to avoid repeating a noun already mentioned' (Vistas, 156). 'Direct object pronouns are used in place of direct objects' (Hola Amigos, 134). Finally, all the positions of the pronouns are covered: 'In affirmative sentences, direct object pronouns generally appear before the conjugated verb. In the negative, the pronoun is placed between the word **no** and the verb' (Vistas, 157). 'In Spanish, direct objects are normally placed before a conjugated verb.' 'In a negative sentence, **no** must precede the object pronoun' (Hola Amigos, 134). 'When the verb is an infinitive construction, such as **ir a** + [*infinitive*], the direct object pronoun can be placed before the conjugated form or attached to the infinitive' (Vistas p. 157). 'When a conjugated verb and an infinitive appear together, the direct object pronoun is either placed before the conjugated verb or attached to the infinitive. This is also the case in a negative sentence' (Hola Amigos, 134). These rules are, of course, given with examples (usually between two and four), sometimes diagrams, and always with a table of the different object pronouns in Spanish.

The next step is to provide exercises. These consist mainly of fill the blanks with the appropriate pronoun, questions and answers, and forming sentences by combining words from lists. There are usually between 3 and 7 exercises before the chapter moves on to the next grammar point, although some books may include many more and some of a more communicative nature. The relevant exercises usually insist on practising both the [clitic verb infinitive] order and [verb infinitive clitic].

The objective of this chapter is not to defend a purely communicative approach or to disparage focus on formS, which is illustrated in the method of these textbooks. After all, our students do seem to learn. But from a simple pedagogical point of view, there is a lot here that may frustrate students. It is never made clear what the difference is between 'receiving the action directly from the verb' and receiving it 'indirectly'. If someone hits me I receive the action, but do I also receive it when

someone sees me? I may not even be aware of being seen. But the truth is, given that the direct and indirect object clitics are identical except in the third person, and that in the third-person native speakers do not agree on what to use, the question is simply irrelevant. Students do not need to know these complicated grammatical rules. They do need to know (although unconsciously) what type of element they are dealing with and that object clitics in Romance are very different from English pronouns and, therefore, they may appear in different positions. I really question whether lengthy rules accomplish this. I believe both generative and applied linguists agree that a different type of approach is needed even when providing explicit input of the kind given here.

Our overview of some of the research related to the acquisition of clitics showed that they are acquired fairly early, at least by the intermediate level, although they are not used very often at the beginning. Zyzik (2008) shows that the use of clitics climbs as the learner progresses, from a minimal 0.6 % of all direct objects to an expected 23.5, close to the average of an adult speaker. The initial strategy of learners is to use full nominal phrases instead of clitics. Bruhn de Garavito and Montrul (1996) and Duffield and White (1999) also show that learners know the position of clitics at least by the intermediate level, and this regardless of whether the first language, like English, does not have clitics, or whether, like French, it does. Both studies also show, however, that, as predicted, the position of the clitic preceding both a main verb and an infinitive (or present participle) is not acquired until much later, if at all.

The question is how to use this information to improve the input the learners receive. The first lesson to take away is that we should not teach everything the first semester of the first year. We could focus on the position of clitics with conjugated verbs, and we could do this without explaining what direct objects or indirect objects are. For example, I could present a recipe: I buy eggs, I beat them, I put them in a pan. If you wish to focus on the position of the clitic, you could direct the students' attention to it. In the course of the year, you could come back to this (something rare in textbooks), using clitics with conjugated verbs often. This does not mean you should never use them with infinitives; it is simply that these would not be the focus of attention. If, however, you do wish to show clitics with infinitives, I would focus mainly on the post-infinitival position, given that evidence shows that this is the position most easily learned. Yes, students will be exposed to native speakers who use the position above the main verb when followed by an infinitive, but again, if they notice this, it can do no harm. This type of approach is based on strong foundations, both from applied linguists who would certainly advise a more communicative approach and from generative linguists who have showed us that, in fact, everything is not learned at once.

When should we focus on the position that causes problems? I think this depends on your approach to teaching. Do you want to wait until it is learnable, which is not until an advanced level? Or do you want to force learners to notice perhaps before they are really ready for it in the hopes that acquisition will be accelerated somehow? There may be arguments for both positions. However, it is important that this

type of decisions is based on sound foundations, and if we ignore what generativists have accomplished, this becomes less likely.

To summarize, I believe an analysis of clitics has shown us several useful things:

- Do not focus so much on the difference between direct and indirect objects. This is something that can be learned instinctively (after all, they know it unconsciously in their own languages), and if learners confuse the two, it will not generally lead to incomprehension. Given the amount of sociolinguistic variation, it is unnecessary to frustrate students with information that has no practical value.
- Do not teach everything at once because everything is not learnable at once.
- Elements that have been shown to be unlearnable at a certain level should not be taught at that level. Classroom time is too valuable to waste on something that is not attainable at a given stage. The only possible result may be a high degree of frustration.

The most important message we should take away, however, is that research carried out within the generative tradition has something to say regarding language teaching. It is a valuable resource that should not be squandered. At the same time, it is also true that generativists should try to make their work more readily comprehensible to those who do not want to invest a lifetime in examining theoretical questions. But a dialogue is not impossible, and we can each learn from the other.

References

Alarcos Llorach, E. 1994. *Gramática de la lengua española*. Madrid: Espasa Calpe.

Andersen, R.W. 1983. Transfer to somewhere. In *Language transfer in language learning*, ed. S. Gass and L. Selinker. Rowley: Newbury House Publishers.

Bialystok, E., and K. Hakuta. 1999. Confounded age: Linguistic and cognitive factors in age differences for second language acquisition. In *Second language acquisition and the critical period hypothesis*, ed. D. Birdsong, 161–181. Mahwah: Lawrence Erlbaum.

Birdsong, D. 1999. Introduction: Whys and why nots of the critical period hypothesis for second language acquisition. In *Second language acquisition and the critical period hypothesis*, ed. D. Birdsong, 1–22. Mahwah: Lawrence Erlbaum.

Blanco, J.A., and P. Redwine Donley. 2005. *Vistas. Introducción a la lengua española*. Boston: Vista Higher Learning.

Bleam, T.M. 1999. *Leísta Spanish and the syntax of clitic doubling*. PhD dissertation. Newark: University of Delaware.

Bley-Vroman, R. 1989. What is the logical problem of foreign language learning? In *Linguistic perspectives on second language acquisition*, ed. S. Gass and J. Schachter, 41–68. Cambridge: Cambridge University Press.

Bruhn de Garavito, J. 2006. Knowledge of clitic doubling in Spanish: A comparison of early and late bilinguals. In *Inquiries in linguistic development. In honour of Lydia White*, ed. S. Montrul, P. Prévost, and R. Slabakova, 305–333. Amsterdam: John Benjamins.

Bruhn de Garavito, J., and S. Montrul. 1996. Verb movement and clitic placement in French and Spanish as a second language. In *Proceedings of the 20th annual Boston University conference on language development*, ed. A. Stringfellow, D. Cahana-Amitay, E. Hughes, and A. Zukowski, 123–134. Somerville: Cascadilla Press.

Campos, H. 1986. Indefinite object drop. *Linguistic Inquiry* 17: 354–359.

Canale, M. 1983. From communicative competence to communicative language pedagogy. In *Language and communication*, ed. J.C. Richards and R.W. Schmidt, 2–27. London: Longman.
Canale, M., and M. Swain. 1980. Theoretical bases of communicative approaches to second language teaching and testing. *Applied Linguistics* 1: 1–47.
Cuervo, M.C. 2002. *Spanish clitics: Three of a perfect pair*. PhD Dissertation. MIT.
DeKeyser, R.M. 1998. Beyond focus on form: Cognitive perspectives on learning and practising second language grammar. In *Focus on form in classroom second language acquisition*, ed. C. Doughty and J. Williams, 42–63. Cambridge: Cambridge University Press.
Doughty, C., and E. Varela. 1998. Communicative focus on form. In *Focus on form in classroom second language acquisition*, ed. C. Doughty and J. Williams, 114–138. Cambridge: Cambridge University Press.
Duffield, N., and L. White. 1999. Assessing L2 knowledge of Spanish clitic placement: Convergent methodologies. *Second Language Research* 15: 133–160.
Eubank, L., and K. Gregg. 1999. Critical periods and (second) language acquisition: Divide et impera. In *Second language acquisition and the critical period hypothesis*, ed. D. Birdsong, 65–99. Mahwah: Lawrence Erlbaum Associates.
Gregg, K.R. 2000. A theory for every occasion: Postmodernism and SLA. *Second Language Research* 16: 383–399.
Gregg, K.R. 2002. A garden ripe for weeding: A reply to Lantofl. *Second Language Research* 18: 79–81.
Gregg, K.R. 2006. Taking a social turn for the worse: The language socialization paradigm for second language acquisition. *Second Language Research* 22: 413–442.
Heap, D. 1996. Optimalizing Iberian clitic sequences. In *Theoretical analyses on Romance languages: Selected papers from the 26th linguistic symposium on Romance languages*, ed. J. Lema and E. Treviño, 227–248. Amsterdam: John Benjamins.
Heap, D. 2000. Morphological complexity and Spanish object clitic variation. In *Romance syntax, semantics and L2 acquisition: Selected papers from the 30th linguistic symposium on Romance languages, Gainesville, Florida, Feb 2000*, ed. C.R. Wiltshire and J. Camps, 55–67. Amsterdam: John Benjamins.
Hymes, D. 1972. On communicative competence. In *Sociolinguistics*, ed. J.B. Pride and J. Holmes, 269–293. Harmondsworth: Penguin.
Jarvis, A.C., R. Lebredo, F. Mena-Ayllón, M. Rowinsky-Geurts, and R.L. Stewart. 2012. *Hola Amigos* (2nd Canadian edn.). Toronto: Nelson Education.
Johnson, J., and E. Newport. 1989. Critical period effects in second language learning: The influence of maturational state on the acquisition of English as a second language. *Cognitive Psychology* 21: 60–99.
Kayne, R.S. 1991. Romance clitics, verb movement, and PRO. *Linguistic Inquiry* 22: 647–686.
Krashen, S. 1977. Some issues relating to the monitor model. In *On Tesol '77*, ed. H.D. Brown, C.A. Yorio, and R.H. Crymes, 144–158. Washington, DC: TESOL.
Lantolf, J.P. 1996. SLA theory building: Letting all the flowers bloom! *Language Learning* 46: 713–749.
Lantolf, J.P. 2000. *Sociocultural theory and second language learning*. Oxford: Oxford University Press.
Lantolf, J.P. 2002. Commentary from the flower garden: Responding to Gregg, 2000. *Second Language Research* 18: 72–78.
Lenneberg, E. 1967. *Biological foundations of language*. New York: Wiley.
Lightbown, P. 1985. Great expectations: Second-language acquisition research and classroom teaching. *Applied Linguistics* 6: 173–189.
Lightbown, P., and N. Spada. 1990. Focus on form and corrective feedback in communicative language teaching: Effects on second language learning. *Studies in Second Language Acquisition* 12: 429–448.
Long, M.H. 1991. Focus on form: A design feature in language teaching methodology. In *Foreign language research in cross-cultural perspective*, ed. K. de Bot, R.B. Ginsberg, and C. Kramsch, 39–52. Amsterdam: John Benjamins.

Masullo, P.J. 1992. *Incorporation and case theory in Spanish. A crosslinguistic perspective*. PhD dissertation. University of Washington.
Roberge, Y. 1990. *The syntactic recoverability of null arguments*. Kingston/Montreal: McGill-Queen's University Press.
Savignon, S. 1983. *Communicative competence: Theory and classroom practice*. Reading: Addison-Wesley.
Schwartz, B. 1993. On explicit and negative data affecting and effecting *competence* and *linguistic behavior*. *Studies in Second Language Acquisition* 20: 147–163.
Schwartz, B.D., and R.A. Sprouse. 1997. *Transfer: A tradition in transition*. Talk presented at American Association of Applied Linguistics, 9 Mar 1997.
Schwartz, B.D., and R.A. Sprouse. 1996. L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research* 12: 40–72.
Selinker, L. 1972. Interlanguage. *International Review of Applied Linguistics* 10: 209–231.
Sheen, R. 2002. 'Focus on form' and 'focus on forms'. *ELT Journal* 56: 303–305.
Suñer, M. 1988. The role of agreement in clitic doubled constructions. *Natural Language and Linguistic Theory* 6: 391–434.
Uriagereka, J. 1995. Aspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry* 26: 79–124.
Watson-Gegeo, K.A. 2004. Mind, language and epistemology: Toward a language socialization paradigm for SLA. *Modern Language Journal* 88: 331–350.
Weinreich, U. 1953. *Languages in contact: Findings and problems*. The Hague: Mouton.
Zobl, H. 1980. The formal and developmental selectivity of L1 influence on L2 acquisition. *Language Learning* 30: 43–57.
Zyzik, E. 2008. Null objects in second language acquisition: Grammatical vs. performance models. *Second Language Research* 24: 65–11.

Chapter 3
L2 Acquisition of Null Subjects in Japanese: A New Generative Perspective and Its Pedagogical Implications

Mika Kizu

3.1 Introduction

The phenomenon of null subjects has been one of the central research topics in the generative approach to second-language acquisition (GenSLA). However, it seems that the findings in GenSLA have not been widely shared with researchers in instructed SLA or with language practitioners. An exception is Rothman (2010: 61), who suggests that "since linguistic theory has already articulated the constraints that regulate the use of pronominal subjects in Spanish, this is a domain in which knowledge of formal linguistic description can directly benefit language instructors and students of Spanish."

This chapter makes another attempt to provide pedagogical implications from generative grammar or GenSLA, by focusing on null subjects in Japanese. Not only null subjects but also null objects are pervasive in the language and so adult second-language (L2) learners of Japanese are formally taught this property from an elementary level. However, how to identify the referent of the null subject and whether to overtly express the subject are not systematically explained in elementary to intermediate textbooks commonly used by L2 learners of Japanese. Thus, acquiring null subjects successfully is entrusted largely to individual teachers' effort and learners' intake.

Thus, the present study explores what the outcome of GenSLA research on null subjects can contribute to the field of the instructed SLA (cf. Doughty 2003)

M. Kizu (✉)
Department of Japan and Korea, SOAS, University of London, London, UK

Kobe University, Kobe, Hyogo Prefecture, Japan
e-mail: mk89@soas.ac.uk

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_3,

and strives to serve as a bridge between generative syntactic analyses and potential classroom practices.[1] The present study looks at null subjects (as well as null objects in comparison) in main clauses by examining L2 learners of Japanese in development. More specifically, it examines elementary to pre-advanced L2 learners' understanding of null subjects by means of an experimental study using a written task, designed to incorporate recent insights by Hasegawa (2008, 2009) into the categorization of Japanese null subjects. To serve our purpose, I discuss the results of the experiment in terms of "focus on form" (Long 1991, 2007 and others), instead of discussing them with respect to generative syntax and GenSLA. The aim of the present chapter is twofold: (1) to present a new perspective from generative syntactic analysis on the distribution of Japanese null subjects and to report the results of the experimental study that based on that perspective, and (2) to consider pedagogical implications based on the findings of the study.

In Section 3.2, relevant previous research on null subjects in generative grammar is briefly summarized and an overview of Hasegawa's (2008, 2009) analysis on Japanese null subjects is presented. Section 3.3 shows the method and results of the experiment, based on which I discuss some implications for focus on form in Section 3.4. Section 3.5 is a summary of the chapter.

3.2 Null Subjects in Generative Syntax

3.2.1 Previous Literature

In languages that allow subjects to be omitted, the resulting "null" subject must somehow be identifiable—otherwise communication could not proceed. Early generative literature on null subjects claimed that null subjects are licensed (and hence, identified) by subject-verb agreement, expressed as inflectional endings on verbs (Chomsky 1981; Jaeggli 1982; Rizzi 1982, 1986). Thus, Italian and Spanish are languages that allow null subjects because these languages have verbal inflections that vary in agreement with the person and number of the subject (e.g., in Spanish: *compr-o* "(I) buy," *compr-as* "(you.INFORMAL.SINGULAR) buy," *compr-a* "(he/she) buys"). In contrast, languages like English lack distinct morphological agreement

[1] See Hawkins (2001: Chapter 5) for an overview of some previous GenSLA research on null subjects. Additional research on null subjects in L2 Japanese is found in Kanno (1997) and Yamada (2009) (among others). L2 acquisition of null subjects has also been widely discussed in reference to an important proposal in GenSLA, the interface hypothesis (Sorace and Filiaci 2006; among others), which predicts increased difficulty in the L2 acquisition of phenomena that require integration of syntax with discourse/pragmatic factors. The empirical study reported in this chapter investigates precisely such a phenomenon, but in order to focus on pedagogical issues, I do not discuss implications for SLA theory here.

for each subject form (e.g., in the present tense, English has only *buy* and *buy-s*) and hence, null subjects are not licensed.

However, this line of analysis encounters a problem when it comes to languages such as Japanese and Chinese, which do not have "rich" morphological agreement between subjects and verbs, and yet have pervasive null subjects nonetheless. Huang (1984) attempted to solve the problem by proposing a parameter whereby languages are either "sentence-oriented" or "discourse-oriented." Japanese and Chinese fall into the discourse-oriented category, in which null subjects are argued to be licensed (and, again, identified) by a discourse topic.[2] Jaeggli and Safir (1989), on the other hand, claimed a link between "morphological uniformity" and null subjects: if a language exhibits agreement morphology throughout the verbal system (e.g., Spanish) or if it does not exhibit such morphology at all (e.g., Japanese), then the language allows null subjects. Other "nonuniform" languages (e.g., English) do not. However, despite yielding many useful insights into the properties of null subjects, all of these analyses have ultimately been criticized both theoretically and empirically. Moreover, with respect to L1 and L2 acquisition research, no concrete evidence has been found to support them (White 1985, 1986; Radford 1990; Davies 1996; Roebuck et al. 1999).[3]

In previous research into null subjects in Japanese, the discussion always starts with the premise that the language does not exhibit agreement between subjects and verbs. This is indeed the case in terms of inflectional verbal morphology; however, Hasegawa (2008, 2009) clearly points out that Japanese *does* exhibit some kind of "agreement" between subjects and predicates, at least for certain constructions. This will be discussed in the next subsection.

3.2.2 Null Subjects in Japanese

Hasegawa (2008, 2009) proposes that Japanese null subjects in the 1st and 2nd person need to be analyzed differently from 3rd person (or more contextually determined) subjects. The 1st or 2nd person feature of the subject in certain sentence types must agree with corresponding predicates (detailed below), which allow the referent of the 1st or 2nd person subject to be identified from the form of the predicate.

[2] "Topic" is used in the technical sense applied in syntactic theory, here. Full explanation of this term is not necessary for the purpose of this chapter. For details, see Huang (1984).

[3] More recent studies on null subjects include Frascareli (2007), Neeleman and Szendroi (2007), Holmberg et al. (2009), and Cole (2009, 2010). Among those, Cole (2009, 2010) provides extensive typological descriptions of null subjects, which would enable us to consider how an L2 learner's L1 may affect his/her acquisitional development of null subjects. However, Cole's analysis still predicts that the referent of a null subject in Japanese can be recoverable from context only, contra what is proposed below.

The instances where a 2nd person subject is not overtly expressed include imperatives (or requests) and prohibitions, as shown in (1) and (2) below[4]:

1. [e] mado-o simete kudasai.
   window-ACC close please
   "Please close the window."

2. [e] kodomo-ni okasi-o age-naide kudasai.
   child-to sweet-ACC give-not please
   "Please do not give sweets to the child."

In the sentence types in (1) and (2), the second person or addressee is not normally phonologically expressed unless any discourse effect, such as contrastive focus or topic shift, is involved. Similarly, in an invitation sentence, such as (3), the 1st person subject is not normally expressed overtly:

3. [e] issyo-ni tabe-masyoo.
   together eat-let's
   "Let's eat together."

The constructions exemplified by (1)–(3) above are analogous to those in English in terms of realization of subjects; as the translation for each example shows, subjects are not expressed in English either. However, Japanese has other sentence types—not analogous to English—in which null subjects are identified by morphological forms or types of predicates. Some of these are illustrated in (4)–(5):

4. [e]/{watasi/*anata/*Hanako-wa} eiga-o mi-ni ik-oo to omoimasu.
   I/you/Hanako-TOP film-ACC see-to go-VOL C think
   "(I think I) will go and see a film."

5. [e]/{watasi/*anata/*Hanako-wa} kibun-ga waruidesu.
   I/you/Hanako-TOP feeling-NOM be.bad
   "(I) feel unwell."

The example in (4) is a volitional sentence in which the volitional verb ending *–(y)oo*, optionally followed by *to omoimasu* "think that," indicates the speaker's desire or intention. If the intended subject was a 2nd or 3rd person, the sentence would become ungrammatical; 2nd and 3rd person subjects require a progressive marker, *-teiru*, as in *–(y)oo to omot-teiru* (or a different lexical predicate altogether). In (5), the predicate expressing a psychological state is used to represent the state of the speaker. If the subject is someone other than the speaker, an evidential modal expression such as *–soo* "seem, appear" must be added to the stem of the adjective.

As shown in (1)–(5) above, Japanese does, after all, have "agreement" between subjects and predicates, in contrast to the prevailing belief that Japanese is not an

[4]Throughout the chapter, [e] stands for a null subject or object ("e" = "empty"). Other abbreviations used in the examples are ACC = accusative, C = complementizer (quotation marker), COP = copula, NOM = nominative, Q = question, SF = sentence-final particle, TOP = topic, and VOL = volition.

agreement language. However, putting aside technical details (see Hasegawa 2008, 2009), it can be said that the difference between typical agreement languages (i.e., Spanish, Italian, etc.) and Japanese is that in the former, agreement takes place within what we will refer to as the "propositional domain," whereas in the latter, it takes place outside the proposition but in the domain of "modality." The proposition, or the propositional domain, means the part of the sentence that expresses its key *content*, and the modality domain means the part of the sentence that expresses the speaker's psychological attitude. In generative syntactic phrase structure, the propositional domain is generally considered to be the tense phrase (TP) (also known as inflectional phrase (IP)), which includes the verb phrase (VP) and its arguments (subject, object, etc.). The domain of modality is the part of a sentence that expresses what type of clause it is: an imperative, or a volitional, etc. This corresponds to the phrase structure above TP (or IP), namely, the domain of the complementizer phrase (CP). A predicate in Japanese that has some kind of modal feature (like *–masyoo* "let's" in (3)) concords with a certain type of person in subject position, and this "agreement" licenses dropping subjects.

Given that the null subjects in (1)–(5) are identified by the modality, expressed by a particular sentence type or form, one may hypothesize that the referent of the null subject in these constructions is easier to identify than that of a 3rd person subject because the referent of a 3rd person subject cannot be determined without context, as shown in (6):

6. Asita [e] kimasu yone.
   tomorrow come SF
   "Tomorrow (someone) will come, right?"

Similarly to (1)–(5), the subject in (6) is not expressed; however, unlike in (1)–(5), the referent of the subject cannot be determined within the sentence, but only in a larger context, like (7):

7. A: C-san-wa kaze-o hiiteiru soodesu.
   Mr. C-TOP cold-ACC is.catching I.heard
   "(I) heard that C has had a cold."
   B: Soo desu ka. Demo asita [e] kimasu yone.
   so is Q but tomorrow come SF
   "Is that so? But (C) will come tomorrow, won't he?"

In the context in (7), the most natural referent of the null subject in B's utterance is C-*san*, the 3rd person. The reason behind this interpretation can be explained by the Centering theory (Walker et al. 1994; Grosz et al. 1995). C-*san*, the topic of the first segment of discourse in A's utterance, is interpreted as the center of the discourse entity since a topic is at the highest ranking of discourse entity proposed by Walker et al. (1994).[5] Keeping the same discourse entity as the center in the second segment of discourse is highly preferred from the viewpoint of coherency.

[5]The ranking in Walker et al. (1994) is (grammatical or zero) topic > empathy > subject > object > others.

The entity (i.e., C-*san*) is realized as a null element in Japanese (whereas in English, it would be an overt pronoun). Therefore, the Centering theory ensures that the null subject in (7B) is interpreted as C-*san* in this context. A 3rd person subject is phonologically realized only when its referent cannot be identified (or is ambiguous), or (as for 1st and 2nd person subjects) when some discourse effect is involved.[6]

To summarize so far, null subjects in constructions such as (1)–(5) may occur since they are identified by agreement between subjects and predicates in the domain of modality. By contrast, the referent of a 3rd person missing subject fails to be identified by agreement in the domain of modality in the same sentence, and therefore, it is recoverable only in context. If Hasegawa's analysis is on the right track, there should a clear dichotomy between 1st/2nd person and 3rd person null subjects in the grammar of Japanese, and it is reasonable to assume that this may affect SLA in Japanese.

3.3 The L2 Data

3.3.1 Research Questions

The previous section has shown that Japanese can be considered to be an agreement language, although the agreement takes place above the propositional domain for certain sentence types containing a 1st or 2nd person subject. It also demonstrates an interesting dichotomy in null subjects: the referent of a 1st or 2nd person null subject is identifiable from the predicate whereas the referent of 3rd person null subject is identified in context.[7] Whether the subject is expressed overtly or not is another matter, which I call the property of "null/overt realization," but the common consensus across null subject languages is that unless any discourse effect such as focus or topic shift is involved or a null subject cannot be identified anywhere, subjects are unexpressed by identification through agreement (in Japanese, for 1st/2nd person subjects) or in context (others). The present study follows this broad analysis of null elements.

As mentioned in the previous section, acquiring 1st and 2nd person null subjects could be easier than acquiring 3rd person null subjects because the former are easily identifiable within a sentence (i.e., within the syntax) and do not usually need to look for their referents in wider context (i.e., integration of syntax with discourse is not

[6]Note that in Japanese, the use of overt pronouns such as *kare* "he" or *kanojo* "she" is not common. These forms were invented to translate male or female pronouns in western languages in the Meiji Era after 1868 (Martin 1976). Therefore, referential NPs, rather than overt pronouns, are used more frequently, and I follow this convention in the written task in the experiment.

[7]It should be noted, however, that some predicates require either a 2nd or 3rd person subject (e.g., *V-soo-da* "I heard that someone V" as mentioned above). The present study excludes such constructions and only "subject-neutral" sentences in which a referent of the 3rd person null subject is chosen from outside the sentence are examined.

Table 3.1 Linguistic factors in the use of null subjects in Japanese

	Identification:	Null/overt realization:
Person	(how a subject is identified)	(what causes a subject to be either null or overt)
1st and 2nd	Agreement	Discourse effect
3rd	Context	Identifiability within the context; discourse effect

required). However, the fact that the sentence types or predicates in (1)–(3) require a 2nd person subject while those in (4)–(5) require a 1st person subject is not systematically taught in Japanese as a foreign language. Indeed, 1st or 2nd person null subject interpretation in imperative, prohibition, and invitation constructions is probably considered a matter of course because these correspond to their English counterparts (if English is used as the medium of teaching), and therefore, classroom instruction does not draw attention to the predicate forms and the relevant interpretation of the subject in such constructions. 3rd person null subject interpretations are not systematically taught either. Thus, by simply considering the input that L2 learners receive from classroom instruction, it is difficult to make a prediction of whether either 1st/2nd null subjects are more successfully acquirable than 3rd person null subjects, or vice versa. Based on this, our broad research questions here are the following:

8. How do adult L2 learners of Japanese acquire null subjects?
   a. Are there any differences observed between types of sentences?
   b. Are there any differences observed between different proficiency levels?

To answer the questions in (8), I assume the following linguistic factors in the null subject phenomenon in Japanese: "identification," which refers to how a referent of a null subject is identified, and "null/overt realization," which refers to the factor(s) that determines whether or not a subject is phonologically realized. Table 3.1 shows how these properties differ for 1st and 2nd person subjects compared with 3rd person subjects. The table shows that 1st/2nd person and 3rd person null subjects identify their referents differently, either by agreement within the sentence or in context outside the sentence, respectively. In terms of realization of a subject as either null or overt, dropping 1st/2nd person subjects is considered as a default because they are always identifiable from the predicate. When a discourse effect, such as contrastive focus, is involved, they are phonologically realized. The null versus overt realization of 3rd person subjects is slightly different, as both discourse effects and identifiability within the context play a role.

3.3.2 Experiment

The experiment was originally designed to investigate L2 acquisition of null subjects on the merits of GenSLA. It consisted of two parts: an assessment of participants' proficiency using the Minimal Japanese Test (MJT; Maki et al. 2003) and the experimental session using a written task designed to investigate

participants' identification of the referents of null elements and their decisions about whether subjects should be overtly expressed or not.

The written task comprises 18 nonsequential, short conversations between "A" and "B." Each conversation has a null element either in the first or second utterance. A background context was given prior to the task: A, B, and another person, C, are friends, and while C's name appears in the conversations between A and B, C is not present at the time of conversation. An example of the task was provided to familiarize participants with the procedure. They could also ask any clarification question during the task.

One of the actual test items is illustrated in (9). All conversations and question sentences were written in Japanese script except for Question 2:

9. A: Raisyuu ( ) eiga-o mi-ni ik-oo to omoimasu.
next week film-ACC see-to go-VOL C think
"(I think I) intend to go to see a film next week."
B: Soo desu ka. Tokorode, C-san-wa eiga-ga suki-desyoo ka.
So COP Q by the way Mr. C-TOP film-NOM like-I.wonder Q
"Is that so? By the way, (I wonder) whether C likes films."

Question 1: Dare-ga eiga-o mi-masu ka? (=Who will go to watch a film?)
I (=A), YOU (=B), C

Question 2: I would fill in the gap ( ) with…
watasi-wa B-san-wa C-san-wa nothing
I-TOP Mr.B-TOP Mr.C-TOP

While grammatical and lexical expressions were controlled at the level that suits beginner participants, some of the words in the test were accompanied by corresponding English translations just in case the participants were not familiar with them. Participants were asked to circle only one answer for each question.

The sentence types examined were imperative, as in (1) above, prohibition, as in (2), invitation (3), volitional (4 and 9A), and psychological state (5) for 1st and 2nd person subjects ($n=10$), and event description (6 and 7B) for 3rd person subjects ($n=2$). The experiment also included sentences with 1st, 2nd, and 3rd person objects ($n=6$);[8] however, the present chapter will focus on the results for items with 1st and 2nd person subjects, whose identification and null/overt realization are distinct from

[8] An example of a test item with a null 3rd person object is as follows:

A: Sensei-wa ( ) yoku homemasu ne.
teacher-TOP often praise SF
"The teacher often praises (C), right?"
B: Soo desu ne. C-san-wa benkyoo-ga yoku dekimasu kara ne.
so COP SF Mr.C-TOP study-NOM well can.do because SF
"Yes. It's because Mr. C is very good at studies, isn't it?"

other null elements (but see footnote 8). The 18 conversations in total were randomly ordered, and the length of each conversation was relatively short: 35–40 characters.

3.3.3 Participants, Procedure, and Method of Analysis

The experiment was carried out at School of Oriental and African Studies, University of London. The participants were 35 nonnative speakers of Japanese (NNS; mean age = 22.2) and 10 native speakers of Japanese (NS; mean age = 26.1). The NNSs were learning Japanese as a major or optional language as an undergraduate or postgraduate student, and NSs were either enrolled on an MA program or studying as exchange students at the same university (except one who had finished an MA program at the time of the experiment).

The majority L1 among the 35 NNSs was English ($n = 23$). Other L1s were Italian ($n = 3$), Russian/English ($n = 2$), Catalan, Chinese, Dutch, French, German, Korean, and Polish ($n = 1$ for each). The NNS participants were taking either an optional or intensive elementary, intermediate, or pre-advanced Japanese course at the time of the experiment. All learners had completed at least 100 hours of formal instruction; however, the length and depth of the exposure to the language ranged widely from only 1 year of study with 3 hours per week of formal instruction to an 18-month stay in Japan in addition to 3–6 years of formal instruction.

The MJT was conducted right before the written task. Based on the MJT results, the NNSs were divided into three groups: High, Mid, and Low, depending on the percentage they obtained in the test. Those who achieved more than 75 % were placed in the High group ($n = 13$), between 60 and 75 %, the Mid group ($n = 13$), and below 60 %, the Low group ($n = 9$).

In the analysis of the results, NSs' answers to Questions 1 and 2 for each item (see (9)) were taken as "standard," unless a particular answer was chosen by fewer than three of the ten NSs. Then, both the standard and deviant answers given by NNSs were calculated. Regarding Question 2, NNSs' answers were excluded if the answer to the corresponding Question 1 (identifying the referent of the missing element) was deviant, under the assumption that correctly identifying an intended referent is a prerequisite for NS-like null/overt realization.

The results of the written task were analyzed in terms of rates of "standard" responses by the NNS participants. Repeated measures ANOVA and two-way tailed paired sample t-tests (setting alpha at .025) were used to further analyze the findings, as described in the following section.

3.3.4 Results of the Experiment

This subsection presents the results of the experiment by type of null/overt elements (i.e., 1st, 2nd, 3rd subjects, and objects) for the three groups of participants.

Table 3.2 Average % of NNSs' standard answers (identification)

	High ($n=13$)	Mid ($n=13$)	Low ($n=9$)
1st person subject	97.44 %	69.23 %	51.85 %
2nd person subject	94.23 %	84.62 %	55.56 %
3rd person subject	92.31 %	92.31 %	94.44 %
Objects	92.31 %	71.80 %	64.81 %
Average	93.48 %	76.92 %	66.05 %

Representative example sentences where a gap appears in subject position are repeated in (10)–(12):

10. [e] eiga-o mi-ni ik-oo to omoimasu. **1st person subject**
film-ACC see-to go-VOL C think
"(I think I) will go and see a film."

11. [e] kodomo-ni okasi-o age-naide kudasai. **2nd person subject**
child-to sweet-ACC give-not please
"Please do not give sweets to the child."

12. Asita [e] kimasu yone. **3rd person subject**
tomorrow come SF
"Tomorrow (someone) will come, right?"

The results for Question 1 of each item show whether NNSs identified null elements in the same way as NSs did. Table 3.2 summarizes the average percentages of standard (= native-like) identification of the missing element types in the three groups.[9]

In terms of overall average percentages, the High group is close to the NS standard at 93.48 %. By contrast, the results in the Mid and Low groups (76.92 % and 66.05 %, respectively) appear to have more discrepancies and may be affected by the type of null element. Statistical analysis by means of a repeated measure ANOVA (type [4 levels; 1st/2nd subjects, 3rd subjects, 2nd/3rd objects, 1st objects] vs. group [3 levels; High, Mid, Low]) shows that the interaction of type and group is significant, as are the main effects of type and group.[10]

[9] For completeness, rates of standard identification of null objects are included, although these are not the focus of this chapter. The somewhat low percentages for objects are mainly due to the results for 1st person object sentences with a giving verb. The average percentages for these sentences were the lowest throughout the three groups: 80.77 (High), 42.31 (Mid), and 38.89 (Low). If the results for 1st person objects are excluded, the average percentages for remaining null object sentences are 98.08 (High), 86.54 (Mid), and 77.78 (Low).

[10] 1st person objects are separated from 2nd/3rd person objects in the ANOVA because the former can be identified within the sentence whereas the latter are identified by context. Details of the ANOVA results are as follows: type x group: $F_{3.02,\ 48.39}=5.73$, $p=.002$, partial eta$^2=.264$, observed power$=.933$; type: $F_{1.51,\ 48.39}=5.73$, $p=.000$, partial eta$^2=.324$, observed power$=.994$; group: $F_{2,\ 32}=15.32$, $p=.002$, partial eta$^2=.264$, observed power$=.933$.

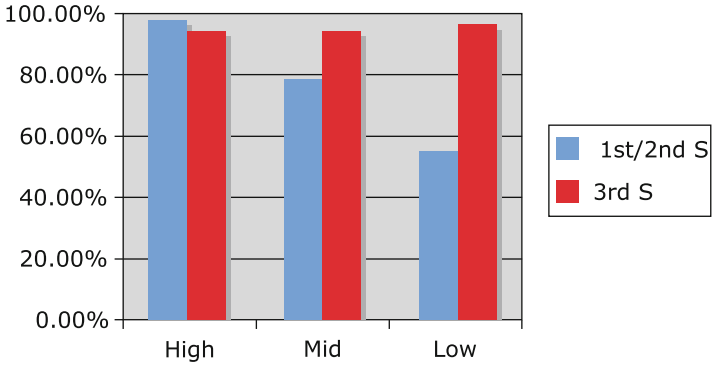


Fig. 3.1 Percentage of identification of 1st/2nd vs. 3rd person null subjects

Table 3.3 Average % of NNSs' standard answers (null/overt realization)

	High ($n=13$)	Mid ($n=13$)	Low ($n=9$)
1st person subject	88.46 %	78.19 %	68.33 %
2nd person subject	86.54 %	70.38 %	82.50 %
3rd person subject	100.00 %	100.00 %	93.75 %
Objects	97.33 %	96.82 %	95.77 %
Average	94.50 %	89.84 %	88.65 %

Focusing more on the differences between 1st/2nd person subjects and 3rd person subjects with respect to identification of null elements, the percentages of standard answers are summarized in Fig. 3.1.

The proportions of identification of 3rd person subjects do not differ much between the three groups in Fig. 3.1. Looking at the difference between 1st/2nd person compared with 3rd person null subjects within each group, we find that the Low group clearly shows a greater difference between the two. This is proved statistically; although the High and Mid groups do not demonstrate any significant difference between the two subject types (High: $t(12)=0$, $p=1$, Mid: $t(12)=1.81$, $p=.096$), the Low group demonstrates a significant difference between 1st/2nd person subjects and 3rd person subjects ($t(8)=4.27$, $p=.003$).

Turning to Question 2 (see (9)), the answers for each item reveal NNSs' performance on null/overt realization of subjects compared to NSs'. Table 3.3 summarizes the average proportions of NNSs' standard answers.

The overall average percentages of the standard answers are as follows: High = 94.50 %, Mid = 89.84 %, and Low = 88.65 %. We also find in Table 3.3 that the proportions of standard answers for 1st and 2nd person subjects are lower than that of 3rd person subjects across the three groups; the average percentages for 1st and 2nd person subjects are 87.50 (High), 74.29 (Mid), and 75.42 (Low).

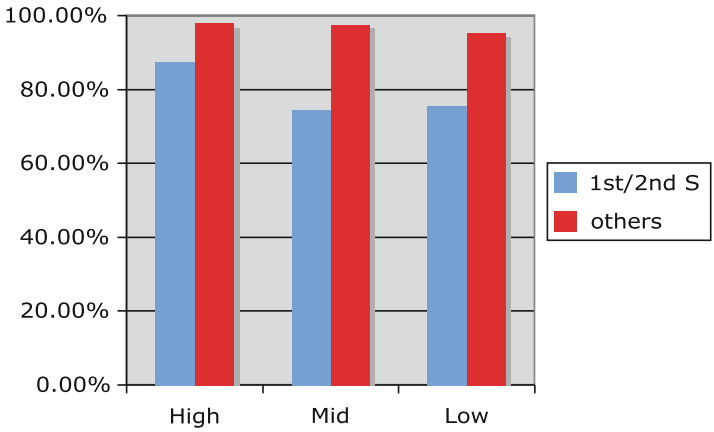


Fig. 3.2 Percentage of null/overt realization of 1st/2nd subjects vs. other elements (3rd subjects and objects)

Interestingly, Fig. 3.2 shows that there are differences between 1st/2nd person subjects and the other elements across all groups. The results of a repeated measure ANOVA (type [3 levels: 1st/2nd subjects, 3rd subjects, objects] vs. group [3 levels: High, Mid, Low]) show that the interaction of type and group is not significant, and nor is the effect of group; however, the main effect of type is significant.[11] *T*-test results show that all three groups, High, Mid, and Low, manifest a significant difference between the answers involving 1st/2nd person subjects versus those for the others (High: $t(12) = -6.15$, $p = .000$; Mid: $t(12) = -6.07$, $p = .000$; Low: $t(8) = -3.68$, $p = .006$).

However, one caveat here is that due to the nature of the test sentences, most of the 1st/2nd subjects must obligatorily either be null or overt except one instance, according to the standard answers given by NSs. On the other hand, there are no instances that must be empty in the other types, and only four instances that must obligatorily be expressed overtly. In all of the remaining items among the 3rd subjects and the object types, null elements could be either null or overt according to the NS responses. Thus, there were more "right answer" possibilities on these items. This could clearly be one reason for the higher rates of standard answers by the NNS participants in the "other" columns of Figure 3.2. In order to find out whether or not the lower proportions for 1st/2nd subjects are due to their restricted choices, let us examine Tables 3.4 and 3.5.

[11] Here, 1st person objects are put together with 2nd and 3rd person objects to form one group. This is due to the assumption that realization of null 1st person objects involves not only discourse effects but also identifiability within the context, which is not the case for 1st/2nd person subjects (see Table 3.1). Details of the ANOVA results are as follows: type x group: $F_{2.14, 34.18} = 2.98$, $p = .061$, partial $eta^2 = .157$, observed power = .558; group: $F_{2, 32} = 2.37$, $p = .110$, partial $eta^2 = .129$, observed power = .444; type: $F_{1.07, 34.18} = 11.77$, $p = .001$, partial $eta^2 = .269$, observed power = .927.

Table 3.4 Average % of NNSs' standard answers for obligatorily null elements

	High ($n=13$)	Mid ($n=13$)	Low ($n=9$)
1st person subject	82.05 %	75.56 %	50.00 %
2nd person subject	86.54 %	70.38 %	82.50 %
Average	84.29 %	72.97 %	66.25 %

Table 3.5 Average % of NNSs' standard answers for obligatorily overt elements

	High ($n=13$)	Mid ($n=13$)	Low ($n=9$)
1st person subject	92.31 %	88.89 %	80.00 %
3rd person subject	100.00 %	100.00 %	87.50 %
2nd/3rd person object	96.16 %	95.00 %	87.30 %
Average	96.15 %	94.72 %	85.53 %

Here, I exclude the answers for the sentences that allow either null or overt and look at the results for "empty option only" in Table 3.4 and "overt option only" in Table 3.5. According to Tables 3.4 and 3.5, we find that NNSs chose overt elements more appropriately (or close to NS) than they did for null elements.[12]

3.4 Discussion

To answer the research question in (8a) and (8b), namely, whether any differences are observed between types of null elements and proficiency levels, the results clearly show that, for participants in the Low group, 1st and 2nd person null subjects were more difficult to identify than 3rd person null subjects, and participants at all proficiency levels found it more difficult to choose non-realization of subjects appropriately for 1st and 2nd person items than for 3rd person items. The results of the experiments are indicative of what Hasegawa (2008, 2009) proposed in the sense that 1st/2nd person subjects are distinct from other null subjects and objects.

What is interesting from a perspective of teaching Japanese as a foreign language is that the current study based on GenSLA reveals new evidence that pinpoints what

[12]One may wonder if there is any effect of L1 transfer involved in the results of the experiment; however, calculating the standard/deviant answers by NNSs with two types of L1, null subject languages (i.e., Italian, Russian, Catalan, Chinese, Korean, and Polish) versus non-null subject languages (i.e. English, Dutch, French and German), no obvious correlation was found. Although it is true that overall, the former group did better than the latter, this is likely to be due to the fact that the latter group had more participants in the Low group while the former has only one in the Low group. This suggests that L2 learners' understanding and performance concerning null subjects are more related to individuals' proficiency levels than their L1, and hence, the role of L1 transfer on the phenomena under investigation will not be considered further in this chapter.

is difficult and when (in terms of stages of proficiency), in learners' L2 acquisition of null elements. What we have seen in previous sections is that it is not the case that all types and properties of null elements are equally hard to acquire, but rather, there are certain types and properties (i.e., identifying 1st/2nd person null subjects in the Low group and null/overt realization of 1st/2nd person subjects in all groups) that are hard for L2 learners to acquire.

Major textbooks used by adult L2 Japanese learners confine their explanation on the phenomena of null elements to a minimum; the usual expository remark is along the lines of "you can drop a subject or object when it is recoverable from context." However, if Hasegawa's analysis and our interpretation of the experimental data are on the right track, the textbook assumption is not a correct description of the phenomena since some constructions can determine the referent of the missing subject sentence internally. Such oversimplified explanation thus may inhibit effective teaching.

How can we further exploit the results we obtained for teaching Japanese? In the following subsections, I would like to refer to focus on form (Long 1991, 2007, and many others) to discuss some pedagogical implications.

3.4.1 Why "Focus on Form"?

Focus on form is a linguistically non-isolating teaching method, which overtly draws learners' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication (Long 1991, pp. 43, 46). It "refers to how focal attentional resources are allocated" and "often consists of an occasional shift of attention to linguistic code features – by the teacher and/or one or more students" (Long and Robinson 1998, p. 23). Focus on form was proposed to examine the effectiveness of classroom teaching and learning, aiming at L2 acquisition of communicative competence without sacrificing either accuracy or fluency.

The concept of focus on form contrasts with that of "focus on formS" and "focus on meaning." Focus on formS is represented by structural or synthetic syllabi, in which "parts of the language are taught separately and step by step so that acquisition is a process of gradual accumulation of parts until the whole structure of language has been built up" (Wilkins 1976, p. 2). Focus on formS has been criticized since it is likely to disobey learners' innate developmental sequences in interlanguage and develop overgeneralization (Lightbown 1983, 1985). Koyanagi (2004, p. 124), following the empirical facts in her experimental research on L2 Japanese, casts doubt on the effectiveness of focus on formS, in which input does not lead to learners' intake, and fluency is not successfully acquired.

Although focus on form entails a focus on formal elements of language and focus on formS is limited to such a focus, focus on meaning actually excludes it (Doughty and Williams 1998, p. 4). The most representative classroom situation which embraces focus on meaning is an immersion program. In such a program, the

L2 is normally learned implicitly and incidentally from exposure to a target language without teachers' intervention. This means that learners' input consists of positive evidence only. However, putting aside the fact that immersion is simply not practical in many L2 acquisition settings, it is also reported in past research on French immersion programs in Canada that immersion learners' grammatical competence often remains far from native-like (Swain 1991). White (1991) proposes that there are certain linguistic features that are unlearnable from positive evidence alone but require negative evidence (in the form of instruction about what is ungrammatical in the target language in addition to what is grammatical) as well. This leads us to argue that formal instruction, which often contains teachers' intervention or negative evidence, is potentially effective, or to push it further, adult L2 learners require instruction that satisfies learners' need.

The question here is whether the phenomenon of null subjects in Japanese should be a target "form" in focus on form rather than target "forms" in focus on formS, or whether they should be learnable with no teachers' intervention as in focus on meaning. I would like to argue that the facts shown in the previous sections suggest that the null subject is precisely a candidate for focus on form.

Williams (2005, p. 673) states that learners often do not notice linguistic elements if they are not salient, and if they are not noticed, they are unlikely to be learned. Hence, such elements can be a candidate for focus on form. Null subjects are not phonologically or morphologically salient because they are simply unrealized. Moreover, comparing to, for instance, errors in more salient verbal conjugation patterns, misinterpretation of null subjects (like the Low group did in the experiment) is not easily and instantly spotted by the teacher until the L2 learner and/or teacher encounters some communication breakdown. Having said that, even if the correct referent normally unexpressed by NSs is phonologically realized by NNSs, it does not create ungrammaticality but rather pragmatic inappropriateness. This sort of unnaturalness is often ignored in classroom instruction. Clearly, missing subjects cannot be taught or learned without meaning or context, and therefore, focus on form, but not really focus on formS, will be potentially effective in teaching null subjects.

Furthermore, given the nature of missing subjects described above, it is difficult and ineffective to use focus on formS because, if you take an example of 1st person missing subjects, the constructions containing them range from invitation with the form of *–masyoo* to psychological state with no particular "forms." Likewise in constructions with a 2nd person subject (imperative and request), they involve various types of forms of predicates (with particular intonation for some of the instances) depending on the register: *tabe-ro* "Eat!," *tabe-te* "Eat.," *tabe-te kudasai* "Please eat.," and so forth. Given that 1st and 2nd person subject constructions should be categorized for capturing the property of null subjects uniformly, L2 learners cannot rely on superficial "forms" alone; accompanying appropriate meaning, functions, and context are indispensable.

Williams further points out that *problematicity* is a central and essential feature of focus on form, which means "all manifestations of focus on form are in response to problems that learners have with form (Williams 2005, p. 675)." As shown in the

previous section, the present study has clarified some aspects of NNSs' difficulties concerning null subjects including the persistent problem of null/overt realization throughout elementary to pre-advanced learners. In particular, the null/overt realization property causes concern about focus on meaning; if L2 learners' ultimate goal is to achieve a native-like language level and if the problem of choosing appropriately between a null or overt subject remains at an advanced or near-native level, L2 learners should not be left simply to their own devices: they may benefit from teachers' meaningful intervention.

3.4.2 Further Pedagogical Implications

The rest of this section discusses how the findings in the present study provide more specific implications in relation to focus on form. The findings are as follows: (1) overall, L2 learners in all groups did better for 3rd person subjects than 1st/2nd person subjects, (2) the Low group had significant difficulties in identifying the referent of missing subjects in 1st/2nd person items compared with 3rd person items, and (3) in all Low, Mid, and High groups, the results for the null/overt realization for 1st/2nd person subjects were significantly different from those for the other types. In particular, pedagogical implications of these findings are discussed in terms of contextual information, learners' noticing, and timing of any pedagogical "intrusion."

First, we have observed that NNSs did better for 3rd person subjects than they did for 1st/2nd person subjects. In fact, the test sentences used for 1st and 2nd person subjects are not embedded in rich context whereas those for 3rd person subjects appear in richer context because they necessarily rely on such context. The conversation in (13) is the test sentence for a 2nd person subject item in a request, and the one in (14) is an event description with a 3rd person subject:

13. A: Samui desu ne. ( ) mado-o simete kudasai.
    cold COP SF window-ACC close please
    "It's cold, isn't it? Please close the window."
    B: Soo desu ne. C-san-ga aketandesyoo ka.
    so COP SF Mr.C-NOM probably.opened Q
    "That's true. (I wonder whether) C opened (it)."

14. A: Rainen ( ) nihon-e ikundesu ne.
    next year Japan-to go SF
    "(C) will go to Japan next year, isn't (s)he?"
    B: Ee, kikimasita. C-san-wa zutto
    yes I.heard Mr.C-TOP for long time
    nihongo-o benkyoositeimasu kara ne.
    Japanese-ACC is.studying because SF
    "Yes, I've heard that. That's because C has been studying Japanese for quite a while."

A referent of the null subject in (13A) can be identified even without B's utterance. NNSs were all informed that the participants of conversation would be only A and B, and no other interlocutors would be involved. In other words, there is no other 2nd person or addressee, and hence, B is the only possible subject in (13A); referring to C in (13B) does not contribute towards identification of the referent of the null subject. In contrast, the referent of the null subject in (14A) cannot be identified without B's utterance. Contextually, the second utterance in (14) is more meaningful than the one in (13) in identifying the referent of the null element. The same pattern is observed between all the test items with 1st/2nd person subjects compared with those with 3rd person subjects.

The fact that NNSs' performance is better with rich context has been observed in previous research. Yano, Long, and Ross (1994) found that simplified texts often lack discourse markers or surplus information that can be an important clue for L2 learners to understand the texts. They conclude that "elaboration can sometimes result in texts that on the surface are linguistically more complex, although cognitively simpler, than the original versions" and "elaborative modification provides semantic detail that foreign language learners find helpful when making inferences from texts" (Yano et al. 1994, pp. 214–215). Thus, our findings here reaffirm the appropriateness of focus on form, because focusing on meaning and communication while drawing attention to form when necessary guides teachers' instructions to the idea of elaborated written or oral/aural material, which will facilitate L2 learners' understanding.

Second, with regard to the finding whereby the Low group had difficulties identifying the referents of 1st/2nd person subjects, does this really mean that NNSs in the Low group misunderstood or do not know the relevant constructions? We cannot deny such a possibility; however, there is another plausible account.

Elementary learners in the Low group are often cognitively overloaded because of their limited proficiency. They may not be able to attend to every single linguistic feature that is meaningful. The apparent difference between most of the constructions with 1st/2nd person subjects and those with 3rd person subjects and others is that the former demand more careful attention to linguistic items realized in the modality domain at the end of the sentence than the latter. I assume that the Low group learners are merely content with comprehending lexical categories within the propositional domain to infer the overall meaning of the test sentences. They might not pay attention to the sentence-final positions with complex forms in the modality domain. This assumption is supported by the input processing model (VanPatten 1995, 2007), which claims (among other things) that learners are limited capacity processors and will seek to grasp meaning by searching for lexical items. The corresponding results in the Mid and High groups suggest that as their proficiency progresses, L2 learners' ability to accommodate a larger cognitive load expands and so they can identify the intended 1st/2nd missing subjects correctly.

Then, do elementary L2 learners require explicit instruction on the forms of the constructions with 1st/2nd person subjects? Focus on form claims that overly intrusive pedagogical interventions prevent L2 learners from successful leaning.

It seems that the problem of identifying the referent of 1st/2nd person null subjects in the relevant constructions will gradually disappear in the course of development. However, our findings suggest that the problem of null/overt realization in the subjects of these constructions is not expected to vanish even at later stages of development. If this is partly caused by the problem of identification in the same constructions at an earlier stage of development, teachers' instruction on the 1st/2nd null subject constructions may help L2 learners' overall development of null subjects in the end. Schmidt (1995, 2001) proposes the noticing hypothesis, in which it is assumed that what learners notice in input is what becomes intake for learning. Under Schmidt's proposal, some explicit instruction on 1st/2nd person null subjects would not be overly intrusive as long as it facilitated the cognitive mapping of forms and meaning/functions. Thus, it seems that it could indeed be helpful to draw L2 learners' attention to and provide explicit instructions on the functions of the 1st/2nd person subject constructions at the elementary level.

Third, with regard to null/overt realization of 1st/2nd person subjects versus that of 3rd person subjects and objects, we have seen that all groups demonstrate target-like behavior for null/overt realization of 3rd person subjects and objects, but this is not the case for 1st and 2nd person subjects. Kawaguchi (1999, cited in Koyanagi 2004) pointed out that appropriate uses of null elements in Japanese require certain developmental processes.[13] The appropriate proficiency level and timing of when to provide instruction needs to be carefully explored: "determining when best to 'intrude' into the ordinary language processing by the L2 learner" (Doughty 2001, p. 207).

Considering the timing issue, we should think about how the two properties, identification and null/overt realization, are related. In theory, the null/overt realization of subjects cannot be determined without knowing their referent, because whether the subject is overtly expressed or not is attributed to discourse effects; failure to recognize the referent results in misapplication of the designated discourse effects to the choice of null or overt elements. Therefore, the acquisition of identification of null subjects can be considered prerequisite to the acquisition of null/overt realization. Since the results of the present study show that the Low group still struggles with identifying 1st/2nd missing subjects more than the others, directing their attention to appropriate null/overt choices is probably ineffective at an elementary level. At a pre-advanced level, represented by the High group in the present study, their overall performance in identifying null subjects is close to that of NSs, and yet, the distribution of their null or overt elements is not so close to the one of NSs. This means that pre-advanced learners are ready to internalize the factors that affect null/overt realization, and at this point, some pedagogical intrusion is rendered meaningful.

[13] It should be noted, however, that Kawaguchi (1999) examined more complicated structures such as relative clauses and subordinate clauses involving null subjects but not the main clauses that we looked at in the present study.

3.5 Summary

In summary, this chapter has shown that adopting Hasegawa's (2008, 2009) analysis, null subjects in Japanese main clauses have two types: 1st/2nd person subjects licensed by agreement in the domain of modality and 3rd person subjects identified in context. This dichotomy was manifested in the experimental findings on L2 Japanese; the elementary learners had more difficulty identifying the referents of 1st or 2nd person subjects than those of 3rd person subjects. Furthermore, all elementary, intermediate, and pre-advanced learners did not make use of null subjects especially for 1st/2nd person subjects. We have discussed that null subjects can clearly be a target of focus on form but not the one of focus on formS or focus on meaning and how the results obtained in the experiment should be interpreted under the idea of focus on form.

However, there is a definite ceiling on the extent to which a conclusive argument can be based solely on the present study, due to the methodology of the experiment. The experiment was conducted by means of a written task, which is not necessarily ideal to gauge learners' natural processing and production. It clearly examines L2 learners' metalinguistic knowledge rather than their language ability in use. Thus, further empirical studies are necessary to confirm what we have discussed in this study.

The contributions of this chapter are as follows: (a) the experimental study, based on the generative syntactic analysis, has clarified the exact problems that L2 learners face in null subject constructions, and (b) the results of the experiment have provided the basis for suggestions from the viewpoint of the instructed SLA, or more specifically, focus on form. Although technical details of the generative syntactic analysis may seem abstract or formal, understanding the language-internal as well as crosslinguistic generalization drawn from the theory would equip practitioners with greater expertise about null subjects.

Acknowledgement A preliminary version of this chapter was presented at the colloquium entitled "Half a century on: What relevance does generative SLA have for language teaching?" at the American Association for Applied Linguistics 2011 Conference, Chicago, USA. I am grateful to the participants at the colloquium and an anonymous reviewer for the present chapter. Many thanks are also due for their valuable comments and suggestions from Heather Marsden, Barbara Pizziconi, and Melinda Whong. This research was partially supported by British Academy Overseas Conference Grant, SOAS Faculty of Languages and Cultures Strategic Funding in 2011, and the Japan Foundation Japanese Studies Fellowship Program (2012–2013).

References

Chomsky, N. 1981. *Lectures on government and binding: The Pisa lectures*. Dordrecht: Foris.

Cole, M. 2009. Null subjects: A reanalysis of the data. *Linguistics* 47: 559–587.

Cole, M. 2010. Thematic null subjects and accessibility. *Studia Linguistica* 64: 271–320.

Davies, W.D. 1996. Morphological uniformity and the null subject parameter in adult SLA. *Studies in Second Language Acquisition* 18: 475–493.

Doughty, C. 2001. Cognitive underpinnings of focus on form. In *Cognition and second language instruction*, ed. P. Robinson, 206–257. New York: Cambridge University Press.

Doughty, C. 2003. Instructed SLA: Constraints, compensation, and enhancement. In *The handbook of second language acquisition*, ed. C. Doughty and M. Long, 256–310. Oxford: Blackwell.
Doughty, C., and J. Williams. 1998. *Focus on form in classroom second language acquisition*. New York: Cambridge University Press.
Grosz, B., A. Joshi, and S. Weinstein. 1995. Centering: A framework for modeling the local coherence of discourse. *Computational Linguistics* 21: 203–225.
Frascareli, M. 2007. Subjects, topics and the interpretation of referential pro: An interface approach to the linking of null pronouns. *Natural Language and Linguistic Theory* 25: 691–734.
Hasegawa, N. 2008. Licensing a null subject at CP: Imperatives, the 1st person, and PRO. *Scientific Approaches to Language* 7: 1–34. Center for Language Sciences, Kanda University of International Studies.
Hasegawa, N. 2009. Agreement at the CP level: Clause types and the 'person' restriction on the subject. In *MIT Working Papers in Linguistics: The Proceedings of the Workshop on Altaic Formal Linguistics*, vol. 5, pp 131–152.
Hawkins, R. 2001. *Second language syntax: An introduction*. Oxford: Wiley-Blackwell.
Holmberg, A., A. Nayudu, and M. Sheehan. 2009. Three partial null subject languages: A comparison of Brazilian Portuguese, Finnish and Marathi. *Studia Linguistica* 63: 59–87.
Huang, C.-T.J. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531–574.
Jaeggli, O. 1982. *Topics in Romance syntax*. Dordrecht: Foris.
Jaeggli, O., and K. Safir. 1989. The null subject parameter and parametric theory. In *The null subject parameter*, ed. O. Jaeggli and K. Safir, 1–44. Dordrecht: Kluwer.
Kanno, K. 1997. The acquisition of null and overt pronominals in Japanese by English speakers. *Second Language Research* 13: 265–287.
Kawaguchi, S. 1999. The acquisition of syntax and nominal ellipsis in JSL discourse. In *Representation and processes: Proceedings of the 3rd Pacific second language research forum*, ed. P. Robinson, 85–94. Tokyo: Aoyama Gakuin University.
Koyanagi, K. 2004. *Nihongo-kyooshi no tame no atarashii gengo-shuutoku-gairon* [Language acquisition theories for teachers of Japanese]. Tokyo: 3A Corporation.
Lightbown, P.M. 1983. Exploring relationships between developmental and instructional sequences in L2 acquisition. In *Classroom-oriented research in second language acquisition*, ed. H. Seliger and M.H. Long, 217–243. Rowley: Newbury House.
Lightbown, P.M. 1985. Can language acquisition be altered by instruction? In *Modeling and assessing second language acquisition*, ed. H. Hyltenstam and M. Pienemann, 101–112. Clevedon: Multilingual Matters.
Long, M. 1991. Focus on form: A design feature in language teaching methodology. In *Foreign language research in cross-cultural perspective*, ed. K. de Bot, R. Ginsberg, and C. Kramsch, 39–52. Amsterdam: John Benjamins.
Long, M. 2007. *Problems in SLA*. Mahwah: Lawrence Erlbaum.
Long, M., and P. Robinson. 1998. Focus on form: Theory, research, and practice. In *Focus on form in classroom second language acquisition*, ed. C. Doughty and J. Williams, 15–41. New York: Cambridge University Press.
Maki, H., J. Dunton, and C. Obringer. 2003. What grade would I be in if I were Japanese? *Bulletin of the Faculty of Regional Studies, Gifu University* 12: 109–118.
Martin, S. 1976. *A reference grammar of Japanese*. New Haven: Yale University Press.
Neeleman, A., and K. Szendroi. 2007. Radical pro drop and the morphology of pronouns. *Linguistic Inquiry* 38: 671–714.
Radford, A. 1990. *Syntactic theory and the acquisition of English syntax*. Oxford: Blackwell.
Rizzi, L. 1982. *Issues in Italian syntax*. Dordrecht: Foris.
Rizzi, L. 1986. Null objects in Italian and the theory of *pro*. *Linguistic Inquiry* 17: 501–557.
Roebuck, F.R., M.A. Martínez-Arbelaiz, and J.I. Pérez-Silva. 1999. Null subjects, filled CPs and L2 acquisition. *Second Language Research* 15: 251–282.
Rothman, J. 2010. Theoretical linguistics meets pedagogical practice pronominal subject use in Spanish as a second language. *Hispania* 93: 52–65.

Schmidt, R. 1995. Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In *Attention and awareness in foreign language learning and teaching*, ed. R.W. Schmidt, 1–63. Honolulu: University of Honolulu.

Schmidt, R. 2001. Attention. In *Cognition and second language instruction*, ed. P.J. Robinson, 3–32. Cambridge: Cambridge University Press.

Sorace, A., and F. Filiaci. 2006. Anaphora resolution in near-native speakers of Italian. *Second Language Research* 22: 339–368.

Swain, M. 1991. French immersion and its offshoots: Getting two for one. In *Foreign language acquisition: Research and the classroom*, ed. B. Freed, 91–103. Lexington: Heath.

VanPatten, B. 1995. *Input processing and grammar instruction*. New York: Ablex.

VanPatten, B. 2007. Input processing in adult second language acquisition. In *Theories in second language acquisition*, ed. B. VanPatten and J. Williams, 115–135. New York: Routledge.

Walker, M., M. Iida, and S. Cote. 1994. Japanese discourse and the process of centering. *Computational Linguistics* 20: 193–232.

White, L. 1985. The pro-drop parameter in adult second language acquisition. *Language Learning* 35: 47–62.

White, L. 1986. Implications of parametric variation for adult second language acquisition: An investigation of the pro-drop parameter. In *Experimental approaches to second language acquisition*, ed. V.J. Cook, 55–72. Oxford: Pergamon Press.

White, L. 1991. Adverb placement in second language acquisition: Some positive and negative evidence in the classroom. *Second Language Research* 7: 133–161.

Wilkins, D. 1976. *Notional syllabuses*. Oxford: Oxford University Press.

Williams, J. 2005. Form-focused instruction. In *Handbook of research in second language teaching and learning*, ed. E. Hinkel, 671–691. Mahwah: Lawrence Erlbaum.

Yamada, K. 2009. Acquisition of zero pronouns in discourse by Korean and English learners of L2 Japanese. In *Proceedings of the 10th generative approaches to second language acquisition conference*, ed. M. Bowles, T. Ionin, S. Montrul, and A. Tremblay, 60–68. Somerville: Cascadilla Proceedings Project.

Yano, Y., M.H. Long, and S. Ross. 1994. The effects of simplified and elaborated tests on foreign language reading comprehension. *Language Learning* 44: 189–219.

Chapter 4
Verb Movement in Generative SLA and the Teaching of Word Order Patterns

Tom Rankin

4.1 Introduction

Prevailing trends in language pedagogy with respect to the teaching of grammar have vacillated over the years, ranging from grammar-translation models to recommendations that explicit instruction in grammar be avoided altogether. Despite continued discussion in instructed second language acquisition research on the roles of implicit versus explicit grammar instruction, the modern consensus could be summed up by MacWhinney (1997: 278):

> Students who receive explicit instruction as well as implicit exposure to forms would seem to have the best of both worlds […] providing learners with explicit instruction along with standard implicit exposure would seem to be a no-lose proposition.

The acceptance of an eclectic approach with both implicit and explicit instruction still leaves open a number of practical questions such as the following: Which forms should be the subject of explicit instruction? When should such forms be introduced? How should they be taught, and how much time should be devoted to explicit instruction? This chapter explores some of these questions with respect to the learning and teaching of word order in second language (L2) English. In particular, issues of what should be taught and how to teach will be addressed on the basis of research findings from generative studies of verb movement in second language acquisition (SLA). The discussion draws on the findings of studies on the transfer of word order patterns by learners whose first language (L1) exhibits verb movement acquiring non-movement L2 English. Verb-movement studies provide an interesting jumping-off point for considering issues of application and pedagogy as this is one area in generative SLA where a concerted effort to study the effects of instruction

T. Rankin (✉)
Department of English Business Communication,
Vienna University of Economics and Business, Vienna, Austria
e-mail: tom.rankin@wu.ac.at

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*,
Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_4,

has been made. In order to maintain a relatively well-defined pedagogical context, the discussion is limited to issues of teaching English as a foreign language. However, it should be clear that many points may be generalized to a range of other target languages.

4.2 Linguistic and Theoretical Foundations

A great deal of research has looked at the L2 acquisition of verb-movement properties in a range of L1–L2 pairings: for example, on acquiring [+movement] target languages, Ayoun (2005), Bohnacker (2006, 2007), Grüter (2006), Hawkins et al. (1993), and Herschensohn (1998); on acquiring [–movement] target languages, Chu and Schwartz (2005), Eubank et al. (1997), and Yuan (2001); and for a general overview, see White (2003: 128–132). We thus have access to a significant accumulation of empirical evidence which has been tested and retested with a variety of methodologies and permits us to draw robust conclusions about which specific grammatical properties pose problems for learners in contexts that require the resetting of verb-movement parameters. Having established which grammatical properties are consistently problematic, we can then take this as an indication of which forms might need to be the subject of instruction.

The various verb-movement studies were carried out within the context of generative theory-internal debates concerning the extent of transfer of the L1 grammar at the initial state and the role of UG in the development of interlanguage grammars. In order to maintain a focus on relevant empirical findings, consideration of the wider theoretical issues surrounding the studies is avoided.

4.2.1 The Linguistic Background

Verb movement is conceived of as a parameter of UG. Languages differ in whether or not they instantiate movement of main thematic verbs, and those languages which have verb movement differ in the distance of the movement operation involved.[1] Verb movement may target different syntactic landing sites. Languages can thus be categorized along with English (–movement), French (+movement to I), and German (+movement to C).

These underling syntactic differences give rise to consistent surface distinctions in word order, in particular with regard to the placement of thematic verbs relative to

[1]Given that verb movement has been the subject of much theorizing in the history of the generative enterprise, the presentation of the syntax of verb movement here is necessarily rather simplified. The original formulations and analyses of verb movement in the languages considered here are due to Pollock (1989) and den Besten (1983). More detailed consideration of a range of issues can be found in Lightfoot and Hornstein (1994).

Table 4.1 Lexical verb placement in English, French, and German

Adverbs and negation		
I often read novels	*Je souvent lis des romans	*Ich oft lese Romane
*I read often novels	Je lis souvent des romans	Ich lese oft Romane
I do not read novels	*Je ne pas lis des romans	*Ich nicht lese Romane
*I not read novels	Je ne lis pas des romans	Ich lese nicht Romane
Questions		
Do you read novels?	*Fais-tu lire des romans?	*Tust du Romane lesen?[a]
*Read you novels?	Lis-tu des romans?	Liest du Romane?
Fronting and topicalization		
Often I read novels	Souvent, je lis des romans	*Oft ich lese Romane
*Often read I novels	*Souvent lis-je des romans	Oft lese ich Romane
Novels, I often read	Des romans, je (les) lis souvent	*Romane ich lese oft
*Novels read I often	*Des romans lis-je souvent	Romane lese ich oft

[a]While ungrammatical in standard German, this sentence would in fact be possible in various German dialects. I leave the issue of the German equivalent of *do*-support to one side

adverbs and negation, and the formation of questions and other inversion structures. The examples in Table 4.1 outline these distinctions. As can be seen, German and French pattern together in the distribution of adverbs and negation. This contrastive difference to English is due to the fact that the verb moves out of VP in French and German to a position higher than adverbs and negation. The differences between French and German with respect to fronting and topicalization reflect the "distance" of the underlying movement operations as verbs in German move to a higher structural position than in French (i.e., they move further left in the surface structure of the clause). These different underlying movement operations are outlined in Figs. 4.1 and 4.2.[2]

The figures show that the verb moves from its original position under V to the I(nflection) node. This is motivated by "strong" I in French, which forces movement of the verb to produce verbal agreement. By contrast, the English weak verbal agreement paradigm ("weak" I) does not force movement of the verb, rather, the tense features lower to the verb. This accounts for *do*-support in English negative declaratives; the presence of negation prevents the lowering of tense features. These features are then realized by forms of *do*, which is semantically empty and serves purely as a vehicle to carry tense and agreement. Alternatively, in compound tenses, the auxiliary forms of *be*, *have*, or modals may be the surface realizations of I. As a result of movement of the verb, adverbs and negation appear to the right of the main verb in French and German and to the left of the main verb in English.

As discussed, while the surface distribution of sentence-medial adverbs and negation with respect to thematic verbs is similar in German and French, the underlying movement operation has longer distance in German (Fig. 4.2). German has a double

[2]This is a somewhat simplified picture in order to concentrate on the pertinent points. The derivation of the surface subject position is not represented, and the representation of adverbs and negation in syntax may be subject to various alternative analyses.

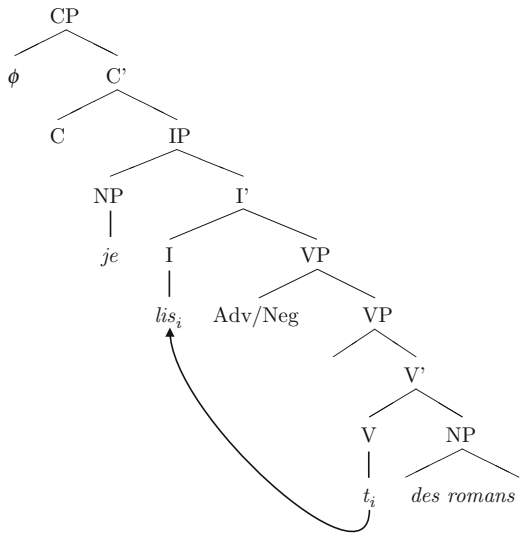


Fig. 4.1 Verb movement in French

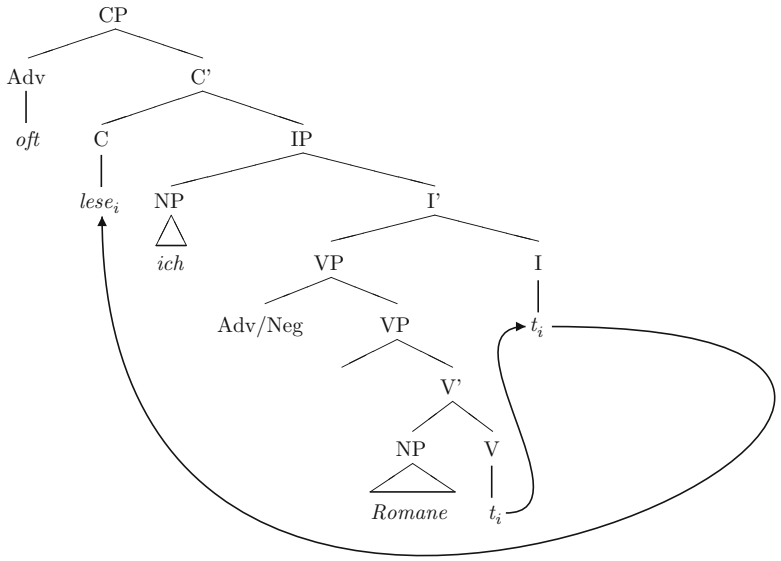


Fig. 4.2 Verb movement in German

movement operation where movement to I is followed by further raising to C. In this case, the C node, which encodes for sentence type, is "strong" in German declaratives and requires some topicalized element to be fronted to sentence-initial position along with movement of the verb. Hence, not only does the verb appear to the left of adverbs and negation, but fronting any nonsubject constituent forces

subject–verb inversion. German is therefore a "verb second" (V2) language, as some verbal element always occurs as the second constituent in main clauses.

This process holds in question formation in all three languages; questions have a "strong interrogative" C and thus require movement to this position. Word order in questions is similar for French and German (with exceptions in French, which can additionally form questions by means other than subject–verb inversion). The distinctive word order in English questions is again due to the fact that the thematic verb is "stranded" at a lower position in the structure (i.e., V). Therefore, only periphrastic *do* or modal or aspectual auxiliaries are available to move further from I, giving rise to *do*-support and subject–auxiliary inversion.

Given these possible variations in the structure of languages with regard to verb movement, speakers of one type of language are faced with the task of arriving at a new parametric setting when seeking to acquire a target language with a different verb-movement setting. For speakers of movement languages acquiring English, the task is to establish that the main verb does not move from VP.

4.2.2 Full Transfer/Full Access

The model of L2 development assumed here to account for the acquisition of new parametric settings is Schwartz and Sprouse's (1994, 1996) full transfer/full access (FT/FA).[3] FT/FA predicts simply that the L1 parameter settings transfer at the initial state in L2 acquisition. In addition to full transfer of the L1, learners have full access to UG during the course of acquisition. New parametric settings are thus in principle available to learners and can be established on the basis of positive evidence, that is, structural cues available in the target language input. Grammar restructuring takes place when the current grammatical representation conflicts with parses of input data. Thus, for example, a French-speaking learner of L2 English will initially assume a verb-movement representation for English, but this will conflict with Neg-V sequences in the input, which cannot be parsed with a verb-movement grammar. This should then motivate resetting to a non-movement grammar.

Despite being guided by UG, restructuring need not necessarily converge on an L2 representation identical to a native target grammar. Where there are robust cues in the input, restructuring may be relatively swift; however, "it may be that the L2 acquirer will never be able to arrive at the TL grammar: either the data needed to force restructuring simply do not exist (e.g., negative data, which are (claimed to be […]) ineffective) or the positive data needed are highly obscure, being very complex and/or very rare" (Schwartz and Sprouse 1996: 42).

[3] This is one of a number of competing models of the relative roles of UG and the L1 in L2 development (see White 2003: Ch. 3). Most of these, in common with FT/FA, assume access to UG but propose differences with regard to the extent of L1 influence.

It would therefore be wrong to assume that the interaction of "full access" to UG with target language input will inevitably lead to the acquisition of L2 grammatical properties in the same way that the interaction of UG and positive linguistic data converge on a target L1 representation. Such an assumption does not take into account the pivotal role of the existing L1 grammar. It is against the backdrop of this preexisting grammatical representation that L2 input data must be judged as obscure or complex. For example, German instantiates scrambling, a grammatical operation that rearranges the relative ordering of nouns, pronouns, and adverbials. Given an appropriate context and prosody, sentences in (1)–(6) are all acceptable German sentences.[4]

1. Ich lese heute den Kindern einen Roman vor.
   I read today the[DAT] children a[ACC] novel from.
   "I am reading the children a novel today."
2. Ich lese den Kindern heute einen Roman vor.
3. Ich lese den Kindern einen Roman heute vor.
4. Ich lese heute einen Roman den Kindern vor.
5. Ich lese einen Roman heute den Kindern vor.
6. Ich lese einen Roman den Kindern heute vor.

A German speaker learning English is faced with the classical superset–subset problem. English is more restrictive in the word order permutations it allows; however, given a German representation which permits a wide range of alternations, the *nonoccurrence* of certain word order patterns in English does not necessarily lead the learner to restructure to a non-scrambling grammar for English. Hence, the restrictive English ordering of (pro)nominals and adverbials could be complex and obscure as input to a scrambling grammar. We return again to this issue below with respect to verb movement.

A further point worth highlighting in Schwartz and Sprouse's definition above is the rarity of relevant data in the input. This is particularly important for instructed L2 learners. While there are general issues in defining and quantifying the frequency of specific structures in any learner's input, for learners whose primary input is classroom instruction, the input is obviously quantitatively and qualitatively different from what one might assume simply by surveying frequencies of structures in native English. In a limited number of classroom contact hours per week, the amount of input is restricted, and the classroom input will often include the nontarget production of fellow learners.

We revisit these different theoretical facets in the remainder of this chapter as explanations for difficulties in the acquisition of English word order. First, however, it is necessary to address the assumption that negative evidence (i.e., information about what is *un*grammatical in the target language) is ineffective in grammar

[4] Scrambling is subject to a range of syntactic, semantic, and pragmatic constraints. It would go far beyond the scope of this chapter to deal with it any detail. For more detail on scrambling in German, see Haider (2010: Ch. 4).

restructuring as this is at the core of whether explicit instruction on grammar can be effective. This is the topic of the next subsection, in which I adopt a broad definition of "grammar teaching" or form-focused instruction from R. Ellis (2006: 84):

> Grammar teaching involves any instructional technique that draws learners' attention to some specific grammatical form in such a way that it helps them either to understand it metalinguistically and/or process it in comprehension and/or production so that they can internalize it.

4.2.3 The Learning/Acquisition Distinction

Schwartz and Sprouse's (1994) claim that negative evidence is ineffective in grammatical restructuring rests on the assumption of a strict distinction between learning and acquisition. In essence, success in *learning* about grammatical properties of an L2 does not necessarily imply having *acquired* that knowledge. Krashen and Terrell (1983: 21) claim that "grammar will be effectively acquired if goals are communicative. Ironically, if goals are grammatical, some grammar will be learned and very little acquired."

This is in a generative tradition of a "no-interface" approach to the learning/acquisition dichotomy, that is, there can be no influence of learned knowledge on the core linguistic module of the mind (e.g., Zobl 1995). As Krashen & Terrell's claim illustrates, this distinction impacts on pedagogical choices concerning L2 grammar. If it is assumed that learned knowledge cannot become part of the implicit knowledge store available for fluent online production, then there is little motivation for teaching grammatical rules. However, in light of recent theoretical and empirical findings, it seems that there is indeed an important role for explicit, learned knowledge of grammar.

N. Ellis (2005) looks at psychological and neurobiological bases for the differences between explicit and implicit knowledge. He agrees that learning and acquisition are "different things" and that implicit and explicit knowledge are "distinct and dissociated" (N. Ellis 2005: 307). Despite this distinction and the fact that explicitly learned knowledge cannot *become* implicit knowledge, there is interface and interaction between the two so that there is a positive role for explicit knowledge, which may be called upon in production. We shall avoid rehashing the theoretical details of the acquisition/learning debate. It will suffice to say that from the point of view of practitioners, there does seem to be a motivation for the teaching of grammar. In addition, there is a range of evidence from instructed SLA research to support a positive role for form-focused instruction.

A brief overview of three meta-studies on the role of form-focused instruction illustrates the main points. Norris and Ortega's (2000) statistical analyses of original SLA instruction studies revealed that grammar teaching was "quite effective" and showed a significant difference to the null hypothesis that there would be no difference between instructed groups and those who had only implicit exposure through communicative and interactive instruction (Norris and Ortega 2000: 479).

In addition, while it was also found that there are durable effects of instruction after immediate post-experimental tests, it was acknowledged that the type of tests administered in the original studies may have favored the use of explicit, learned knowledge rather than tapping implicit knowledge for free production.

R. Ellis (2002) addresses this drawback in his research synthesis by including only studies which had a control group and tested free production. The result for form-focused instruction was again positive; 7 of the 11 studies surveyed showed that it was successful in improving accuracy scores, even in free production (R. Ellis 2002: 229). Once again, the effects persisted in delayed posttests. However, it was found that the length of instruction and the nature of the target structure were crucial factors (R. Ellis 2002: 232). In particular, form-focused instruction was more effective when relatively simple morphological features such as verb forms were the target of instruction. Complex syntactic structures involving word order variation were not as amenable to instruction (an issue we return to below).

Complexity of target structures is a central element of Spada and Tomita's (2010) meta-analysis, which investigates the interaction of type of instruction and the nature of target English structures. In the 41 studies analyzed, grammatical structures are coded as simple or complex depending on the number of transformations involved. For example, a complex structure such as a *wh*-question requires *wh-replacement*, *do*-support, subject–auxiliary inversion, fronting, etc. By contrast, a simple structure such as regular past tense formation requires just *–ed* affixation. Complex structures on the whole required four or more transformations. In this case, the finding indicated that explicit instruction gave rise to larger effect sizes than implicit instruction for both simple and complex structures and could be interpreted as meaning that explicit instruction is more effective for both types of structure.[5] As with Ellis (2002), explicit instruction also seemed to improve learners' ability to employ grammatical features in "unanalyzed and spontaneous ways" (Spada and Tomita 2010: 290).

In sum, then, results of instructed SLA studies would seem to indicate that there is indeed a role for form-focused instruction in improving performance. At first sight, this does not seem to sit well with the no-interface generative tradition that there can be no interaction between implicitly acquired and explicitly learned knowledge. However, on Ellis' (2006) view of the distinction between implicit and explicit knowledge, it is possible to maintain the conceptual distinction between acquisition and learning but acknowledge that explicit knowledge is useful in promoting accurate production. In any case, from a pedagogical point of view, one can afford to be more agnostic on the exact nature of the acquisition/learning distinction. As a teacher, it is not necessary to buy into the underlying assumptions of a particular theoretical (psycho)linguistic model in order to apply findings in the classroom. If empirical research demonstrates that form-focused instruction is

[5] Another methodological caveat is in order as the measure of complexity used is acknowledged to be just one of a range of possible measures, which may have yielded different results (Spada and Tomita 2010: 289).

effective in promoting accurate linguistic production, it makes sense as a practitioner to include form-focused instruction in lessons, regardless of theoreticians' current standing on the acquisition/learning distinction.

4.3 Input, Negative Evidence, and Grammar Restructuring

In the following, we briefly review the results of studies on the acquisition of English word order by speakers of verb-movement L1s. The aim is to illustrate, firstly, what is difficult to acquire and, secondly, by drawing on the assumptions of FT/FA, why certain structures are difficult. All the studies are in line with the theoretical assumptions of FT/FA, even where they predate its formulation. This then provides the basis for Section 4.4, which presents a consideration of how persistent developmental difficulties might be addressed in teaching.

4.3.1 Resetting the Verb-Movement Parameter

In a series of seminal studies, White and colleagues examined the transfer of verb movement by L1 French learners of L2 English (White 1990/1991, 1991, 1992, White et al 1991; Trahey and White 1993). The studies all involved beginner-level learners between 11 and 12 years old who were taking part in ESL programs in Quebec. The studies used a range of tasks, including grammaticality judgment, sentence preference, and sentence manipulation tasks. A major goal of the studies was to investigate the role of explicit instruction in the process of parameter resetting.

The three major questions addressed by the Quebec studies were as follows: Do learners transfer their L1 parametric settings to the L2? Is there parameter resetting such that the different surface properties related to parameters show clustering?[6] Can providing negative evidence in teaching affect parameter resetting?

At the core of the acquisition problem for L1 French learners of English is adverb placement. White (1991) tests this structure and finds that learners initially transfer the L1 parameter settings as they allow verb raising over adverbs and accept SVAO order in English. However, they did not completely reject the target SAVO order. This illustrates that parameter resetting in this case apparently does not act like a switch with discrete, mutually exclusive settings. It is also worth mentioning that the learners were not absolute beginners and had previously had some exposure so may have established that SAVO was possible in English. The finding that both the movement and non-movement structures were accepted by the learners then contradicts the hypothesis that there will be clustering of properties related to an

[6]Lardiere (2009) notes that the broad parameter resetting approaches tested in such early studies did not meet with success, indicating the need to reevaluate how parameters are conceptualized.

underlying parameter. Rather than "resetting" between discrete options, it seems that learners assume that verb raising is optional in English.

Expanding on the study of adverb placement, White (1992) examines all three constructions (adverbs, negation, questions) related to verb movement. Questions were elicited by means of an oral production task, and all three constructions were tested with a sentence preference task where learners were asked to decide whether one sentence out of pairs, as (7)–(9), was better than the other.

7. Like you pepperoni pizza?/Do you like pepperoni pizza?
8. The boys like not the girls./The boys do not like the girls.
9. Linda takes always the metro./Linda always takes the metro.

The learners performed similarly to native speaker controls on questions and negation, rejecting the nontarget sentences in 86 and 85 % of cases, respectively. Native speakers rejected the nontarget option at a rate of 97–98 %. By contrast, the learners rejected SVAO in only 23 % of cases (compared to 95 % for native speakers). Again, this indicates a lack of clustering of parametric properties. While adverb placement continues to be problematic and shows evidence of L1 transfer, negation and questions are broadly target-like and show little or no evidence of transfer.

Given that positive evidence in the form of *do*-support does not seem to impact on L2 adverb placement, White (1990/1991) seeks to determine whether negative evidence in the form of form-focused instruction that SVAO is *not* possible in English may motivate parameter resetting. The learners were divided into two groups, one of which got form-focused instruction over a period of 2 weeks on adverb placement. Five hours of form-focused instruction provided both positive *and* negative evidence on adverb placement, showing that SAVO was possible and SVAO was ungrammatical in English. A second group, the question group, received instruction on question formation, but no explicit attention was given to adverb placement. This group thus only had access to positive evidence of non-movement in the form of *do*-support.

Post-instruction tasks at intervals of 2 and 5 weeks after teaching showed that the adverb group was significantly more likely than the question group to accept and use SAVO word order and correct SVAO word order. So, overall, form-focused instruction appeared to be effective in enhancing learners' appreciation of what word order patterns are permissible in English (White 1990/1991: 356).

In the long term, however, the positive results become questionable. A follow-up study 1 year after instruction and immediate posttests showed that instruction did not have lasting effects as the learners had reverted to using and accepting the nontarget SVAO structures (White 1991). It thus seems that even though form-focused instruction did enhance short-term performance, it had not affected the learners' underlying competence. Schwartz and Gubala-Ryzak (1992) draw on this among other empirical and conceptual arguments to show that the underlying competence of the learners had not been affected and that parameter resetting never occurred. Rather, the learners had simply generalized from instruction that certain surface patterns were impossible in English. They may have been applying a learned rule of thumb that adverbs cannot come after main verbs. For example, as well as rejecting

ungrammatical SVAO sequences in the tests, the learners also rejected grammatical sentences where adverbs occurred between intransitive verbs and directional or locational prepositional phrases (10).

10. John walked quickly to the store.

Schwartz and Gubala-Ryzak assume the same no-interface position which holds that UG is an insulated linguistic module of the mind that receives input in the form of positive evidence in the primary linguistic data. There is no mechanism which can translate conscious knowledge *about* the grammatical rules of a language into input for the language acquisition device (Schwartz and Gubala-Ryzak 1992: 33). However, given the discussion in Section 4.2.3 of the apparent long-term effectiveness of grammar teaching on performance, the question becomes why negative evidence did not appear to be effective in this case (see Section 4.4).[7]

4.3.2 Losing Verb Second

Research on the acquisition of English by speakers of V2 L1s addresses the same sort of questions as the Quebec studies, with the same sort of results; learners seem to transfer their L1 parametric settings, and there is persistent optionality of nontarget subject–verb inversion, indicative of V2.

Westergaard (2003) studied the acquisition of English word order by Norwegian schoolchildren in grades 1–7. Grammaticality judgment, translation, and sentence preference tasks were used to tap pupils' knowledge of word order in English. In general, the children relied to a major extent on the L1 grammar when judging or producing English sentences. However, there was a developmental trend whereby the use of V2 structures decreased as proficiency increased. In topicalization structures, for example, the fifth graders produced nontarget V2 structures such as (11) in three quarters of instances, the sixth graders half the time, and the seventh graders one third of the time.

11. The spaghetti is Susan eating, not the bread.

An asymmetry was identified in the transfer patterns. There was a distinction between thematic and auxiliary verbs; auxiliary verbs were more likely to be used in nontarget V2 patterns, while thematic verb placement was more target-like. This is perhaps an indication of the difficulties posed to speakers of a V2 L1 by the English input (see below).

In the production of *wh*-questions, there is also a developmental trend. Again, learners initially rely on the L1 grammar; in simple tense questions, which would

[7] At least some of the studies covered by Norris and Ortega (2000) held posttests up to 48 weeks after instruction and therefore can be considered to be comparable with the research by White and colleagues.

require *do*-support, it is found that the fifth graders produce thematic verb movement in 72 % of instances (12), with target *do*-support in only 10 %.

12. Where sits the cat?

Between 6th and 7th grade, there is a "major leap" in acquisition (Westergaard 2003: 96). At this stage, more than half the pupils provide the correct *do*-support structure.

Robertson and Sorace (1999) studied patterns of V2 transfer concentrating on nontarget V2 in declaratives, that is, subject–verb inversion. They use corpus evidence and grammaticality judgment data from L1 German learners of L2 English in high school grades 8, 9, and 12 and in the first and fourth years of university English courses. Their results are in general compatible with Westergaard's as they also identify a developmental trend whereby the proportion of learners who retain an optional V2 constraint steadily declines as proficiency increases. Interestingly, however, even the highest-proficiency learners in the study (4th year university students of English) still retain optional V2, thus raising the possibility that nontarget V2 may be permanently problematic. Also in line with Westergaard's results, it is found that nontarget V2 is restricted to non-thematic verbs, and there is no evidence at all in the learners' production for main-verb raising (Robertson and Sorace 1999: 343).

Overall then, similar patterns emerge in the Quebec and the V2 studies. There is no uniform resetting of underlying parameters, and particular structures seem to be prone to persistent optionality. It is possible to account for this from an FT/FA perspective in terms of the interaction of the input and the L1 grammar.

4.3.3 The Difficulties of English Word Order

There has been much discussion of cues and triggers for parameter setting (see Ayoun 2003: Ch. 3). Among other issues, it is not obvious exactly which patterns might act as triggers for parameter setting or how frequent particular triggers must be in the input. For present purposes, we will concentrate on the FT/FA idea that parameter setting is failure-driven; a mismatch between the form of an input string and the syntactic representation assigned to it by the grammar will trigger restructuring. Applied to the data discussed above, we see that English word order patterns pose a considerable problem for learners with a verb-movement L1.

Westergaard (2003: 84) suggests that a combination of the facts that the English system is more marked and that the input, in terms of both the frequency of occurrence of certain structures in English and the controlled input in a pedagogical setting, makes it difficult for learners to retreat from a V2 grammar. This markedness analysis assumes that the mixed English system, where auxiliaries move but lexical verbs do not, makes English more complex than consistently V2 languages like Norwegian or German. A wide range of English structures are in fact formally compatible with a V2 grammar and thus will not motivate grammar restructuring. Questions and negation structures with auxiliaries are ambiguous with respect to

V2; word order with modal and aspectual auxiliaries is the same in English and Germanic V2 languages (13–15).

13. Ich habe den Roman nicht gelesen./I have not read the novel.
14. Hast du den Roman gelesen?/Have you read the novel?
15. Welchen Roman hast du gelesen?/Which novel have you read?

Furthermore, while *do*-support in questions and with negation provides unambiguous evidence that lexical verbs never move from V, these structures are in fact also ambiguous with regard to V2. Frequently occurring strings such as Subj-*do*-Neg-V and wh-*do*-Subj-V can be parsed by a V2 grammar and so would not motivate parameter resetting. In addition, the distribution of copula *be* in English is problematic for V2 L1 learners. In fact, *be* seems to conform to a V2 distribution; again, however, the positive evidence in English is misleading as only a subset of a true V2 distribution is possible (16)–(20). The same parsing problem applies; (17) and (19) can be parsed by a grammar in which the verb moves to C, thus reinforcing a V2 grammar.

16. The novel is on the table./Der Roman ist auf dem Tisch.
17. On the table is the novel./Auf dem Tisch ist der Roman.
18. *On the table the novel is./*Auf dem Tisch der Roman ist.
19. The novel is not good./Der Roman ist nicht gut.
20. *Good is the novel./Gut ist der Roman.

For learners with a French-type L1, the *do*-support cue in the input seems effective in promoting restructuring and the loss of verb movement in questions and negation. It indicates that English thematic verbs cannot move over negation. However, movement in relation to adverbs is still problematic. Perhaps the general variability of adverb placement simply cannot serve as a cue. Lightfoot and Hornstein (1994: 10–11) claim that adverb distribution is unhelpful in setting verb-movement parameters for children acquiring their L1. They propose that it is implausible that children must first acquire the details of adverb syntax as the basis for setting verb movement. Adverb placement in English, and many languages, is variable and governed by semantic and discourse-pragmatic properties. L1 acquisition research has shown that children acquire core verb-movement properties early. It is suggested that the operation may be independent of adverb placement and that adverbs are "much less robust than interrogatives and negatives in a child's experience" (Lightfoot and Hornstein 1994: 10). From a theoretical point of view, Delfitto (2005: 104) similarly claims that "the use of facts of adverb placement as a diagnostic for syntactic operations affecting constituents other than adverbs … is arguably more problematic than it is generally assumed."

We are thus faced with a situation where there is continued optional transfer of certain word order properties involving movement. These properties are due to problematic distribution in the input; adverb placement is variable and adverbs themselves seem not to be robust as a cue for grammar restructuring. Finally, from the starting point of a V2 grammar, a wide range of English structures can in fact be accommodated by this representation, leading to persistent difficulties in restructuring to target word order in all contexts.

4.4 Teaching English Word Order

We turn now to the issue of teaching English. As English word order is misleading as input to a verb-movement grammar, simply providing rich input is not sufficient to motivate restructuring in line with target English grammar. In particular, nontarget adverb placement and nontarget subject–verb inversion may fossilize. In this case, we could employ explicit instruction to compensate for the lack of implicit acquisition. Of course, this has already been tested in the Quebec studies. Negative evidence on adverb placement did seem to improve learners' use of SAVO and rejection of SVAO in English initially; however, it did not give rise to long-term improvement and it also led to nontarget overgeneralization.

While Schwartz and Gubala-Ryzak (1992) may be right to claim that teaching did not motivate implicit parameter resetting, the instruction did in fact seem to function as compensatory learned knowledge, at least in the short term. The pedagogical questions that arise then are as follows: Why did the instruction not lead to long-term improvement? How can the nontarget overgeneralization be avoided? In response to these questions, it must be borne in mind that the teaching intervention in the Quebec studies was restricted to a limited time period of 2 weeks and provided form-focused instruction only on the grammaticality of SAVO and ungrammaticality of SVAO.

Given the complexity of constraints on English adverb placement, it is unsurprising that a simple pedagogical rule along the lines of "no verb–adverb order" should give rise to overgeneralization. What would need to be taught are subtle linguistic constraints which are not amenable to a straightforward instructional treatment. Swan (2006: 8) observes that there are "areas of grammar where it is difficult or impossible to provide learners with rules which are both accurate enough to provide a basis for making correct structural choices, and simple enough to be remembered, internalized, and acted on."

So, we arrive at a point where it seems that positive input cannot motivate grammar restructuring along target lines in certain instances; form-focused instruction to enhance explicit knowledge could in principle compensate, but what needs to be taught are subtle syntactic, pragmatic, and semantic constraints (detailed further, below) which are not amenable to a straightforward presentation of pedagogical rules.

4.4.1 Grammaring Word Order

One way of bringing a more appropriate form of form-focused instruction into teaching is the concept of "grammaring" (Larsen-Freeman 1991, 2003).[8] In general terms, this implies a change of perspective: Rather than a static set of rules to be

[8]There are obviously wider issues surrounding when, how, and to whom grammaring should be introduced (refer to Larsen-Freeman 2003: 150–154). On general issues of when to employ grammar instruction, Celce-Murcia (1991) provides useful guidelines.

passed on from teacher to student in discrete units of presentation and drill, grammar should be viewed as a fifth skill alongside reading, writing, speaking, and listening. This involves encouraging autonomous learning by giving students "the tools of inquiry" to learn how to learn grammar by encouraging them to analyze target language structures consciously in terms of the interactions between their form, meaning and use, and to formulate and experiment with hypotheses about language patterns (Larsen-Freeman 2003: 153–154). This then circumvents the problem of having to provide simplified grammatical rules as it encourages learners to establish their own analyses and rules in a guided fashion, thus also allowing them to respond flexibly to their own needs so that more advanced or linguistically sophisticated learners may establish rules for subtle linguistic constraints. Viewing grammar as a fifth skill also permits the inclusion of "grammatical" activities consistently throughout a syllabus once the tools of grammatical analysis are established.[9] A more extensive consideration of grammatical patterns together with an inclusion of a wider range of more subtle semantic and pragmatic rules should serve to improve accurate conscious knowledge of adverb distribution and inversion structures to compensate for any lack in implicit competence.

4.4.1.1 Adverbs

Adverb distribution lends itself quite readily to a grammaring treatment. This could be achieved in a number of ways depending on the proficiency and aims of the students; for example, they could be asked to find examples of a range of different adverb placement options and analyze them to establish their own hypotheses about how distribution affects meaning or use. One example is the distinction between manner and comment meanings of adverbs depending on their placement in the clause (21–22). Here, it could be pointed out that, while there are a number of possible options in English, the SVAO order does not correspond to any specific meaning or use.[10]

21. I answered all the questions honestly. (manner)
22. Honestly, I don't know the answers to those questions. (comment)
23. I honestly answered the questions.
24. *I answered honestly the questions.

[9]Celce-Murcia and Larsen-Freeman (1998) discuss an extensive range of grammatical properties of English based on the grammaring approach of interaction of form, meaning, and use. They discuss adverbials (Ch. 25) and focus and emphasis (Ch. 30), which provide a number of points that may be helpful in addressing nontarget verb movement and V2 properties in L2 English. However, they are obviously aimed at a more general audience and deal with factors that are not directly relevant for present purposes.

[10]SVAO does of course occur in heavy NP shift in English as in (i). This could be analyzed, perhaps with advanced students, in terms of the constraints on this marked order.

(i) I answered honestly all the questions posed to me by the lawyer.

This sort of treatment could be incorporated into vocabulary activities in which the focus is on the meaning of adverbs and adjectives. The differences in meaning according to distribution could then be addressed more or less explicitly in response to the sentences or texts students produce, or embedded in a wider treatment of word order to raise awareness of the possibilities of adverb distribution in general. It also allows issues related to this problematic area of grammar to be returned to under different guises to avoid a sense of drilling. The salient point with respect to grammaring is that the students are provided with the tools to analyze English sentences (including their own production) in terms of the grammatical form and also the intended meaning or the context of use. This should enable them to correct nontarget production, especially in contexts, such as written production, which are conducive to monitored output and important in an EFL context.

Points of adverb grammar also lend themselves readily to analysis in terms of the connection between form and use. Again, this draws on the variable distribution of time or frequency adverbs to show contrast or emphasis (25–29).

25. I usually speak Spanish with my parents. But sometimes we speak English.
26. Usually I speak Spanish with my parents. But sometimes we speak English.
27. I usually speak Spanish with my parents. But we sometimes speak English.
28. I speak Spanish with my parents usually. But we speak English sometimes.
29. *I speak usually Spanish with my parents. But we speak sometimes English.

While there are no semantic differences, these sentences illustrate how word order may be employed in different pragmatic contexts and could also be combined with negative evidence to show that the SVAO patterns cannot be used for any particular function in English. Such information could be exploited in text production or editing activities, where students are required to add adverbs to a preprepared text. This would serve to illustrate how different adverbs may be used in different structural environments to create specific pragmatic effects such as emphasis or contrast. Again, this allows grammatical information to be included naturally in tasks with a broadly communicative focus. This background on the form/use mappings would also provide a context in which to discuss any nontarget answers in terms of either structurally impossible SVAO or pragmatically inappropriate configurations.

4.4.1.2 Verb Second

Grammaring activities could be used to draw attention to inversion patterns in English. This would seek to address the issue of nontarget topicalization structures and would rely on distinctions in pragmatic use of different inversion constructions in English.

As discussed above, the distribution of the copula shows that English is a mixed system which in some respects is similar to a V2 language. Presentation of

"rules" or exploratory activities could establish the V2 distribution of copula *be* (30–34).[11]

30. Where is the pen?
31. *Where does the pen be?
32. The pen is on the table.
33. On the table is the pen.
34. *On the table the pen is.

In formal terms, students must establish that, unlike other main verbs, copula *be* moves in questions and declaratives. In terms of the form/use connection, one could discuss the more marked inversion structures as in (33) and the discourse-pragmatic contexts in which this would be appropriate. Alternatively, interactive tasks involving giving directions, describing locations, etc., would lend themselves to the use of these types of structures. Descriptions of places or events could also be used to illustrate that main verb *be* is not consistently V2 in all contexts (35–36) unlike its German counterpart (37–38).

35. My holiday was wonderful.
36. *Wonderful was my holiday.
37. Meine Ferien waren wunderschön.
38. Wunderschön waren meine Ferien.

The positive evidence available from the English input does not rule out structures such as (36), which a V2 speaker might assume is possible by overextending the distribution of *be* in (32–33) and by analogy with the L1, as illustrated by the German examples.

Focus and fronting structures would be amenable to oral communicative activities on emphatic forms, which serve to indicate that emphasis and contrast is not achieved with inversion in English. Recall that learners with a V2 L1 would optionally produce sentences such as (39).

39. *The spaghetti is Susan eating, not the bread.

This sort of nontarget structure could be contrasted with examples of how English achieves similar effects with phonological or different syntactic means (40–42).

40. Susan was eating the spaghetti, not the bread.
41. It was the spaghetti Susan was eating, not the bread.
42. What Susan was eating was the spaghetti, not the bread.

[11] The nature of the constructions considered here means that they are likely more appropriate for quite advanced learners. The distribution of *be* could be supplemented by discussion of locative or stylistic inversion. This would lend itself to hypothesis formation in terms of the sort of verbs which may invert and the contexts where inversion is possible and/or necessary. This would, however, probably only be appropriate for very advanced learners.

Again, this could be incorporated into collaborative exercises involving discussion and negotiation, for example, group activities where participants have to argue for a particular course of action or their point of view and would require the use of contrast or emphasis in exchanges. This embeds the target English option within the need to achieve communicative goals and can be contrasted with the L1 strategy, and as with the point already discussed, it allows teachers to draw explicit attention to problematic formal properties of English in a range of possible exercises and contexts.

4.5 Conclusions

A wide range of generative research has shown that for speakers of languages which instantiate verb movement, the acquisition of English word order is a difficult prospect. Even though English input would appear to provide word order cues for L2 grammar restructuring, there are reasons why these cues may not be effective in all contexts. The variable nature of adverb placement and the occurrence of apparent V2 structures in English may give rise to persistent nontarget variability in L2 English. It thus seems that the positive evidence available from English word order is not robust enough to force grammar restructuring, a problem which becomes more acute in instructed EFL contexts where the input is necessarily quantitatively and qualitatively restricted in comparison to an L2 context in an English-speaking country.

On the assumption that form-focused instruction may be effective in addressing learners' difficulties with points of target grammar, the questions of what and how to teach then become relevant. On the question of what to teach, the straightforward answer seems to be that learners with a + movement L1 may require support in the form of form-focused instruction on adverb placement and also on inversion in declaratives in the case of learners with a V2 L1. By contrast, there are relatively few problems with word order in questions and with negation.

Of course, attempts have already been made to investigate whether providing explicit negative evidence on adverb placement, that is, the ungrammaticality of SVAO, may force grammar restructuring. While this was effective in promoting better performance on adverb placement in the short term, it seemed ineffective in the long term. However, it is possible that the problem with negative evidence on adverb placement is that the complex constraints on adverb placement do not lend themselves to an accurate and simple pedagogical treatment that learners can subsequently draw upon. Given that adverb and inversion constructions are subject to a range of subtle linguistic constraints, the "grammaring" framework may provide a suitable approach to address such areas. This approach aims to establish grammar as the "fifth skill" and provide learners with the means to analyze the target language. This permits the inclusion of extensive consideration of areas of L2 grammar in instruction and aims to equip learners with tools to analyze novel input so that they do not have to rely on simple explicit rules of thumb. From a pedagogical point of

view, it is advantageous to empower students to take control of their own learning of grammar by developing their own analyses or "rules."

Finally, this sort of approach could set the scene for further research on the effectiveness of instruction by testing whether and how more sophisticated classroom grammatical analysis would in fact help in the acquisition of subtle properties of word order. This may permit further refinement of the approach to hone elements which are helpful and address any issues which may continue to be less effective in promoting knowledge of target word order properties. It chimes well with the generative approach of detailed, abstract analyses of the grammatical structure of L1, L2, and learner language. This could provide suitable information to feed into more sophisticated pedagogical analyses of grammatical structures in the classroom and from there to further pick up where the Quebec studies left off and examine the effectiveness of this sort of approach in the classroom.

References

Ayoun, D. 2003. *Parameter-setting in language acquisition*. London: Continuum.

Ayoun, D. 2005. Verb movement in Spanish: "Mixed languages" and bilingualism. In *Proceedings of the 4th international symposium on bilingualism*, ed. J. Cohen, K.T. McAlister, K. Rolstad, and J. MacSwan, 143–162. Somerville: Cascadilla Press.

Bohnacker, U. 2006. When Swedes begin to learn German: From V2 to V2. *Second Language Research* 22(4): 443–486.

Bohnacker, U. 2007. On the 'vulnerability' of syntactic domains in Swedish and German. *Language Acquisition* 14(1): 31–73.

Celce-Murcia, M. 1991. Grammar pedagogy in second and foreign language teaching. *TESOL Quarterly* 25(3): 459–480.

Celce-Murcia, M., and D. Larsen-Freeman. 1998. *The grammar book. An ESL/EFL teacher's course*. Boston: Heinle & Heinle.

Chu, W., and B. Schwartz. 2005. Another look at 'verb raising' in the L2 English of Chinese speakers. In *Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference GASLA 2004*, ed. L. Dekydtspotter et al., 66–85. Sommerville: Cascadilla.

Delfitto, D. 2005. Adverb classes and adverb placement. In *The Blackwell companion to syntax*, vol. 1, ed. M. Everaert and H. van Riemsdijk, 83–120. Malden: Blackwell.

den Besten, H. 1983. On the interaction of root transformations and lexical deletive rules. In *On the formal syntax of the Westgermania*, ed. W. Abraham, 47–131. Amsterdam: John Benjamins.

Ellis, R. 2002. Does form-focused instruction affect the acquisition of implicit knowledge? *Studies in Second Language Acquisition* 24: 223–236.

Ellis, N.C. 2005. At the interface: Dynamic interactions of explicit and implicit language knowledge. *Studies in Second Language Acquisition* 27: 305–352.

Ellis, R. 2006. Current issues in the teaching of grammar: An SLA perspective. *TESOL Quarterly* 40(1): 83–107.

Eubank, L., J. Bischof, A. Huffstutler, P. Leek, and C. West. 1997. 'Tom eats slowly cooked eggs': Thematic verb raising in L2 knowledge. *Language Acquisition* 6: 171–199.

Grüter, T. 2006. Another take on the L2 initial state: Evidence from comprehension in L2 German. *Language Acquisition* 13(4): 287–317.

Haider, H. 2010. *The syntax of German*. Cambridge: Cambridge University Press.

Hawkins, R., R. Towell, and N. Bazergui. 1993. Universal Grammar and the acquisition of French verb movement by native speakers of English. *Second Language Research* 9(3): 189–233.

Herschensohn, J. 1998. Minimally raising the verb issue. In *Proceedings of the 22nd annual Boston University conference on language development*, ed. A. Greenhill, M. Hughes, H. Littlefield, and H. Walsh, 325–336. Somerville: Cascadilla Press.

Krashen, S., and T. Terrell. 1983. *The natural approach: Language acquisition in the classroom*. Oxford: Pergamon.

Lardiere, D. 2009. Further thoughts on parameters and features in second language acquisition: A reply to peer comments. *Second Language Research* 25(3): 409–422.

Larsen-Freeman, D. 1991. Teaching grammar. In *Teaching English as a second or foreign language*, 3rd ed, ed. M. Celcia-Murcia, 279–296. Boston: Heinle & Heinle.

Larsen-Freeman, D. 2003. *Teaching language. From grammar to grammaring*. Boston: Heinle & Heinle.

Lightfoot, D., and N. Hornstein. 1994. Verb movement: An introduction. In *Verb movement*, ed. D. Lightfoot and N. Hornstein, 1–18. Cambridge: Cambridge University Press.

MacWhinney, B. 1997. Implicit and explicit processes – Commentary. *Studies in Second Language Acquisition* 9(2): 277–281.

Norris, J., and L. Ortega. 2000. Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning* 50(3): 417–528.

Pollock, J.-Y. 1989. Verb movement, UG and the structure of IP. *Linguistic Inquiry* 20: 365–424.

Robertson, D., and A. Sorace. 1999. Losing the V2 constraint. In *The development of second language grammars: A generative approach*, ed. E. Klein and G. Martohardjono, 317–361. Amsterdam: John Benjamins.

Schwartz, B., and M. Gubala-Ryzak. 1992. Learnability and grammar reorganization in L2A: Against negative evidence causing the unlearning of verb movement. *Second Language Research* 8: 1–38.

Schwartz, B., and R. Sprouse. 1994. Word order and nominative case in nonnative language acquisition: A longitudinal study of L1 Turkish-L2 German interlanguage. In *Language acquisition studies in generative grammar*, ed. T. Hoekstra and B. Schwartz, 317–368. Amsterdam: John Benjamins.

Schwartz, B., and R. Sprouse. 1996. L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research* 12(1): 40–72.

Spada, N., and Y. Tomita. 2010. Interactions between type of instruction and type of language feature: A meta-analysis. *Language Learning* 60(2): 263–308.

Swan, M. 2006. Does grammar teaching work? *Modern English Teacher* 15(2): 5–13.

Trahey, M., and L. White. 1993. Positive evidence and preemption in the second language classroom. *Second Language Research* 12: 111–139.

Westergaard, Marit. 2003. Unlearning V2: Transfer, markedness and the importance of input cues in the acquisition of word order in English by Norwegian children. In *EUROSLA yearbook*, vol. 3, ed. S.H. Foster-Cohen and S. Pekarek Doehler, 77–101. Amsterdam: John Benjamins.

White, L. 1990/1991. The verb-movement parameter in second language acquisition. *Language Acquisition* 1: 337–360.

White, L. 1991. Adverb placement in second language acquisition: Some effects of positive and negative evidence in the classroom. *Second Language Research* 7: 133–161.

White, Lydia. 1992. Long and short verb movement in second language acquisition. *Canadian Journal of Linguistics* 37: 273–286.

White, Lydia. 2003. *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.

White, L., N. Spada, P. Lightbrown, and L. Ranta. 1991. Input enhancement and L2 question formation. *Applied Linguistics* 12(4): 416–432.

Yuan, B. 2001. The status of thematic verbs in the second language acquisition of Chinese: Against inevitability of thematic-verb raising in second language acquisition. *Second Language Research* 17: 248–272.

Zobl, H. 1995. Converging evidence for the 'acquisition-learning' distinction. *Applied Linguistics* 16(1): 35–56.

Chapter 5
Modifying the Teaching of Modifiers: A Lesson from Universal Grammar

David Stringer

5.1 Introduction

One area of grammar that has received relatively scant attention in research on pedagogy involves the word order of modifiers, that is to say, modifiers of nouns (adjectives), verbs (adverbs), and prepositions (P-modifiers). While it is generally acknowledged that command of such elements is a fundamental part of grammatical knowledge, little is known about how learners develop systems of modifiers over the course of acquisition, and the efficacy of existing teaching materials is open to question. In this chapter, I consider the pedagogical implications of recent findings of second language research on language universals in the syntax of modifiers and in doing so illustrate how theoretically oriented, formal research can have practical implications for syllabus design and materials development.

The syntax in question is illustrated in the following example, in which the alternative orders of adjectives (**yellow lovely*), adverbs (**completely soon*), and P-modifiers (**back right*) are all clearly ungrammatical to native speakers.

1. The lovely yellow bird soon completely vanished right back into the trees.

Native judgments are also fairly robust even when there are three or more modifiers together, as exemplified below.

2. She bought a *beautiful old red wooden* box.
3. He *probably no longer completely* believes her.
4. I ran *straight on through* into the room.

Learners who achieve high levels of proficiency – Interagency Language Roundtable (ILR) level 4/Common European Framework of Reference (CEFR) level C2 – are

D. Stringer (✉)
Department of Second Language Studies, Indiana University, Memorial Hall 310, Bloomington, IN 47405, USA
e-mail: ds6@indiana.edu

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_5,

expected not to make errors with such orderings, yet it is not clear how this knowledge is to be acquired.[1] Adjective order is included as a topic in almost all North American English-as-a-second-language (ESL) textbook series, but the treatment is problematic in several ways: the materials are generally introduced in one-off topic-specific lessons, either at beginner, intermediate, or advanced levels, and are never systematically recycled; there is no evidence that students make use of the "rules" introduced; and teachers express doubts as to the usefulness of explicit instruction in this domain. The learnability problem is even greater for adverbs and P-modifiers, as multiple instances of these elements are essentially absent from current teaching materials, with no more than accidental occurrence.

While research on the acquisition of adjective order can shed light on the efficacy of existing teaching materials at all levels of instruction, related research on adverbs and P-modifiers can inform the development of materials at more advanced levels. Over the last decade or so, there has been a growing interest in discovering areas of grammar not covered in traditional syllabi for the purpose of improving instruction at higher levels of proficiency, especially in nonuniversity governmental institutions, for the training of military personnel, diplomats, and foreign correspondents. In the United States, institutions such as the Defense Language Institute, the Office of Naval Research, and the Foreign Service Institute have been concerned with the problem of raising proficiency from ILR level 3, superior, to level 4, distinguished. (The status of level 5 remains controversial.) A small number of university-sponsored centers have also focused on the development of near-native speakers, such as the Center for the Advancement of Distinguished Language Proficiency at San Diego State and the Center for Language Study at Yale. However, the vast majority of university-run English language programs offer no such instruction, the most "advanced" students graduating with a TOEFL PBT proficiency of 500–550 (approximately ILR level 2/2+). Strings of modifiers can be shibboleths in the native/nonnative distinction and, as such, must be addressed in the teaching process in some way. Although some of the implications of the studies discussed here may be for high-level instruction, participants in the experiments were drawn from a range of lower levels of proficiency (beginner to advanced in standard programs, ILR levels 1–2+), in order to more strictly control for degree of exposure to the target language while holding experimental instruction constant.

Learners need to overcome much more than the lack of available teaching materials, as they also face a learnability problem of a different nature: the need for constraints on the kinds of interlanguage grammars they generate. For example, in the case of modifiers, the margin for error increases dramatically with the number of elements combined, following the "*n* factorial" (in mathematical notation: *n!*). In a phrase such as *beautiful old red wooden box*, the 4 modifiers have 24 possible means of combination ($1 \times 2 \times 3 \times 4 = 24$), only one of which is correct. In a sentence such as *Jack fell straight back down from right up on top of the hill*, the 8 elements

[1]The ILR and the CEFR are the standard governmental language proficiency scales used in the United States and Europe, respectively.

preceding the PP phrase *of the hill* have 40,320 possible combinations, again only one of which is correct.[2] Yet native speakers are unswervingly accurate in production, and in comprehension can process such strings in milliseconds. It seems unlikely that first language (L1) or second language (L2) learners of English could converge on the appropriate grammar in such cases without some kind of innate knowledge, if not of the order itself, then of more abstract underlying principles of combination. From the outset, research on Universal Grammar has been particularly concerned with this type of learnability problem (Chomsky 1957: 13). As we shall see, considering the multiplicity of logically possible alternatives, the fact that variation in the syntax of modifiers is so limited across languages bolsters the claim that language learning is guided by language universals. Formal research on this topic can reveal what such universals might be, thus enabling us to distinguish what learners already know and the specific knowledge they must acquire to master the syntax of modifiers in a particular language.

L2 research from the perspective of Universal Grammar has the potential to inform the teaching of modifiers with regard to two general sets of questions, the first concerning the role of language universals and the second concerning the role of L1 knowledge in processes of L2 development. The two studies discussed in this chapter address these issues in turn. The first study was developed from the assumption that comparative research on the syntax of P-modifiers is on the right track, such that there are aspects of grammar in this domain that do not have to be taught. However, as regards implications for pedagogy, the precise nature of the universals is important. If the syntactic structures involved exist independently of lexical items, as "templates" or "constructions," then frequency of exposure to such constructions should facilitate acquisition. If, however, the grammatically relevant aspects of word meaning are sufficient to determine the syntactic environment, according to universal mapping principles, then classroom teaching can focus on contextualized vocabulary: the correct word order should be naturally manifested once the lexical semantics is in place, without specific instruction on multiple modifiers.

The second study, inter alia, addressed the question of the influence of the L1 in the acquisition of English adjective order. In early approaches to "language transfer," some argued that a priori contrastive analyses of languages could make predictions about where learner problems were likely to be found, and teaching materials could be designed following such analyses (Lado 1957). Others maintained that as a priori analyses sometimes predict errors that do not occur and predict ease of acquisition in areas where problems do surface, it is best to wait to see the kinds of errors that learners make and then amend teaching materials following an a posteriori error analysis (Gradman 1971; for further discussion, see Schachter 1974; Gass 2013). In designing the study, both approaches were pursued: predictions were made based on a comparative syntactic analysis of the relevant languages, and learner data was experimentally solicited in the form of different kinds of judgment

[2]Abbreviations used for syntactic categories are as follows: N (noun), V (verb), Adj (adjective), Adv (adverb), and P (preposition/postposition/particle); phrasal projections are abbreviated NP, VP, AdjP, AdvP, and PP.

tasks, to identify areas of instructional need based on actual learner responses. General questions concerning transfer include the following. In what ways does modifier order vary across languages? What predictions might there be for crosslinguistic influence? Is there evidence that learners transfer aspects of syntax from their L1s, leading to different paths of development, such that different L1 groups would benefit from different teaching materials?

The answers to these questions, of course, may differ according to the precise grammatical domain; for example, in the world's languages, there appears to be much more variation in the syntax of adjectives than P-modifiers. They may even differ within a syntactic category; for example, certain combinations of adjectives may follow a fixed, universal order, while others may be subject to language-specific preferences. Nevertheless, formally oriented studies of syntactic representation, crosslinguistic variation, and second language acquisition can provide the foundations for syllabus and materials design in this area. Ideally, teachers faced with the task of instructing their class on the use of modifiers, or confronted with spontaneous questions in class, should be able to understand what learners already know and what they need to learn, what differences may exist among different L1 groups of learners, and whether teaching should focus on syntactic hierarchies (as is currently the case with published materials on adjective order) or whether the syntax will appear naturally once the meanings of the modifiers are in place.

In Section 5.2, a review is given of the type of pedagogical materials already available, and the efficacy of such materials is questioned. Recent linguistic insights into the nature of syntactic hierarchies of modifiers are briefly summarized, and an outline is given of the second language research project, currently in progress, whose findings to date are discussed in Sections 5.4 and 5.5. These sections provide summary reports of experiments investigating the L2 acquisition of P-modifiers and adjectives, respectively, with some clear, immediate implications for second language pedagogy, as well as some results which require further investigation. Finally, these findings are discussed in the more general context of how research on language universals can support language teaching.

5.2 Hierarchies of Modifiers: Beyond the Textbook

In order to ascertain whether or not ESL learners in the United States are exposed to instruction on word order of modifiers, a survey was conducted of pedagogical materials in the ESL library of Indiana University, one of the more established centers of English language teaching in the United States, which contained mainstream textbooks from the last four decades of instruction (1970–2010). In particular, all grammar series were consulted, with specific attention paid to those currently used by the students who were to participate in the experiments discussed below. Of the three hierarchies of modifiers, only adjective order has ever received any attention in standard American ESL textbooks. Moreover, instruction has never been systematic: in no textbook series was there any recycling of materials. In a single lesson,

learners are presented with the word order of adjectives, and it is hoped that from that lesson on they will consciously remember that *size* come before *depth* or that *age* comes before *material* or that *weight* comes before *nationality*. Strikingly, although these word order facts are often thought of by linguists as quite complicated, and thus appropriate for higher-level instruction, such lessons may appear at any stage of proficiency, depending on the series. For example, Azar and Hagen (2006a: 410–413) introduce the hierarchy [opinion > size > age > color > nationality > material] at the beginner level; Thewlis (2007: 150–152) introduces the hierarchy [evaluation/opinion > appearance (usually size > shape > condition) > age > color > origin (geographical > material)] at the intermediate level; and Maurer (2000: 138–145) introduces the hierarchy [opinions/qualities > size/height/length > age/temperature > shapes > colors > nationalities/social classes/origins > materials] at the "advanced" level (approximately ILR level 2). The textbooks and accompanying workbooks encourage students to memorize the order of categories of adjectives and then provide practice through exercises typically involving preference tasks, error correction, and unscrambling. Examples of each are given below.

Preference task: Azar and Hagen (2006b: 216)
Directions: Choose the correct completions.

We work in ____ office building.
A. a large old B. an old large

Error correction: Thewlis (2007: 152)
Are these sentences correct or incorrect? If they are incorrect, identify the problem and correct it.
I bought a green, old, pretty vase at the flea market.

Unscrambling: adapted from Maurer (2000: 144)
Unscramble the sentences in the conversation.

BILL: This is (party / office / formal / a) isn't it? What if I wear (tie / my / silk / new)?
NANCY: That's fine, but don't wear (shirt / purple / ugly / that / denim) with it. People will think you don't have (clothes / any / suitable / dress-up).

Anecdotal reports and online blogs reveal uncertainty on the part of language teachers about the efficacy of such materials. A representative comment from an ESL weblog runs as follows.

5. "If explicitly teaching grammar and syntax is largely ineffective, then explicitly teaching English adjective order must be nearly at the top of the list of ineffectual classroom activities. It just feels like one of those things that simply, but not easily, needs to be "picked up"."
(Retrieved November 12, 2010 from http://eslweb.net/blog/?p=287)

As yet, there is no research available that speaks to learning outcomes following this type of instruction, and no treatments have been implemented that allow

comparison between explicit instruction as compared, for example, to systematic inclusion of multiple adjectives in teaching materials with ostensibly communicative goals. However, anyone with a modicum of experience in linguistics understands that learners are highly unlikely to make use of conscious memorization of such hierarchies in online speech production. In this sense, these materials are similar to traditional materials for the teaching of allophones of the plural morpheme. Although teachers have been presenting learners with the effects of word-final voicing on plural –*s* for decades (for an older example, see Lado and Fries 1954; for a recent example, see Grant 2010), it is understood that accuracy in fluent speech relies fundamentally on unconscious knowledge that has been acquired in a way irrelevant to the conscious articulation of grammatical rules.

Just what the underlying grammar might look like has been revealed by recent crosslinguistic syntactic research. For each category of modifier, there appears to be a universal hierarchy, such that for any language, the hierarchy can predict the order of modifiers. Not all languages have all types of modifier, but whenever they have two or more, the order is manifested. In the adjectival domain, various formal hierarchies have been proposed, such as the following formulation by Laenzlinger (2005):

6. [$_{\text{quantif}}$ ordinal > cardinal] > [$_{\text{speak-orient}}$ subjective comment > evidential] > [$_{\text{scalar physical property}}$ size > length > height > speed > depth > width] > [$_{\text{measure}}$ weight > temperature > wetness > age] > [$_{\text{non-scalar physical property}}$ shape > color > nationality/origin > material]

Differences between languages can be nontrivial, as we shall see. Particular notions might be expressed by adjectives in one language and nouns in another (a *wooden table* in Japanese is a *ki no tēburu* – wood of table – "a table of wood"). Some languages rely on modification through relative clauses rather than direct adjectival modification. In some languages the ordering is the mirror opposite of English; however, in such cases the relative proximity of modifiers to the head of the phrase remains the same. Whenever a language has direct adjectival modification, the order of multiple adjectives is predictable from the universal hierarchy.

Less well-known outside formal linguistics is the adverbial hierarchy, the most systematic investigation of the ordering of which is found in Cinque (1999):

7. [Mood$_{\text{speech-act}}$ *frankly* [Mood$_{\text{evaluative}}$ *fortunately* [Mood$_{\text{evidential}}$ *allegedly* [Mod$_{\text{epistemic}}$ *probably* [T$_{\text{past}}$ *once* [T$_{\text{future}}$ *then* [Mod$_{\text{irrealis}}$ *perhaps* [Mod$_{\text{necessity}}$ *necessarily* [Mod$_{\text{possibility}}$ *possibly* [Asp$_{\text{habitual}}$ *usually* [Asp$_{\text{repetitive}}$ *again* [Asp$_{\text{frequentative(I)}}$ *often* [Mod$_{\text{volitional}}$ *intentionally* [Asp$_{\text{celerative(I)}}$ *quickly* [T$_{\text{anterior}}$ *already* [Asp$_{\text{terminative}}$ *no longer* [Asp$_{\text{continuative}}$ *still* [Asp$_{\text{perfect(?)}}$ *always* [Asp$_{\text{retrospective}}$ *just* [Asp$_{\text{proximative}}$ *soon* [Asp$_{\text{durative}}$ *briefly* [Asp$_{\text{generic/progressive}}$ *characteristically* [Asp$_{\text{prospective}}$ *almost* [Asp$_{\text{sg.completive(I)}}$ *completely* [Asp$_{\text{pl.completive}}$ *tutto* [Voice *well* [Asp$_{\text{celerative(II)}}$ *fast/early* [Asp$_{\text{repetitive(II)}}$ *again* [Asp$_{\text{frequentative(II)}}$ *often* [Asp$_{\text{sg.completive(II)}}$ *completely*]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]

Such enormous strings are obviously never attested, but again, the prediction is that when any two or three adverbs are used, the order will follow the hierarchy.

The third type of modifier hierarchy is the least studied. Stringer (2005) and Stringer et al. (2011) argue that at least three types of prepositional modifier – degree, flow, and trajectory – may co-occur in a fixed structural hierarchy, as exemplified in (8).

8. a. [degree [flow [trajectory]]]
   b. The helicopter flew [$_{\text{DEG}}$ {right/straight} [$_{\text{FLOW}}$ {on/back} [$_{\text{TRAJECT}}$ {through/down} [$_{\text{PP}}$ into the valley]]]].

In order to investigate knowledge of these syntactic universals, a series of studies was conceived, concentrating on each category of modifier in turn, to be conducted with the participation of adult L2 learners of English from different language backgrounds, all enrolled in the Intensive English Program of a large Midwestern university. The results of the first study, investigating the acquisition of P-modifiers, were discussed by Stringer et al. (2011) in terms of their relevance to issues to L2 acquisition theory and models of mental architecture. In the following section, I revisit these results in order to draw out implications for L2 pedagogy. This is followed by a work-in-progress report on the second stage of the project, dealing with the acquisition of adjective order. Together, these two studies illustrate how differences in experimental design can produce results with different implications for classroom teaching.

5.3 L2 Acquisition of P-Modifier Order

It was decided to begin this project on the acquisition of modifier systems with the least-studied case: P-modifiers, previously exemplified in (8). The order of these modifiers can be additionally illustrated by means of Table 5.1.

That these are indeed modifiers with a fixed word order to the left of the head P, and not verb particles or "satellites," is shown by tests of displacement (9a–d).

9. a. The helicopter flew {*straight through on/*on straight through/*on through straight, etc.} into the valley.
   b. It was [straight on through into the valley] that it flew.
   c. *It was [through into the valley] that it flew straight on.
   d. *It was [into the valley] that it flew straight on through.

Degree modifiers such as *right* and *straight* are well recognized (e.g., Emonds 1976). Flow modifiers may be identified distributionally, as they must follow degree and must precede trajectory. *On* expresses the continuation of the directional flow, and *back* expresses the reversal of the directional flow. The third class consists of elements normally appearing as lexical prepositions but functioning in this case as modifiers, thus elaborating on simple trajectories. They include *up*,

Table 5.1 Three categories of spatial modifiers

1 Degree	2 Flow	3 Trajectory	PP
Right	On	Over	Into the valley
Straight	Back	Through	
		Across	
		Up	
		Down	

down, *through*, *over*, and *across*. Their status as modifiers can be distinguished from their status as prepositions by means of tests of syntactic distribution as in (9). Not all languages lexicalize all types of modifier, but when two or more are found, they conform to syntactic predictions: German and English lexicalize all three; Estonian and Hungarian only have the higher two; French and Spanish only have the highest; and Japanese and Korean have none at all, expressing such functions elsewhere in the grammar (see Stringer et al. 2011, for further discussion).

For this set of experiments, the focus was not on transfer but on testing for knowledge of the universal hierarchy even when there are no multiple P-modifiers in the L1. Given the scope for possible errors, the lack of instruction, and the relative rarity of multiple modifiers in the input, accuracy in the absence of the possibility of L1 transfer would suggest access to Universal Grammar on the part of adult L2 learners. In addition, the experiments sought to shed light on the question of whether target-like accuracy in the word order of prepositional modifiers depends on (i) frequency of exposure to the hierarchy itself or (ii) acquisition of the lexical semantics of the individual modifiers, such that the hierarchy is naturally manifested. If (i), then pedagogical materials might be developed that include selected instances of multiple modifiers; if (ii), then explicit teaching of the hierarchy is unnecessary, and advanced instruction should focus on contextualized vocabulary rather than syntax.

5.3.1 Experiment I: Aladdin Preference Task

The participants were all enrolled in a university Intensive English Program. The six proficiency levels tested were derived independently of the project by the battery of placement exams used by the program. Initial placement criteria included composition, reading, vocabulary, grammar, listening comprehension, and oral interviews, and promotion in the course involved integrating subsequent sets of test performance scores with previous course grades and current TOEFL scores. A total of 121 students successfully took part in the first experiment, after ten subjects were eliminated according to preestablished criteria. For purposes of analysis, participants were grouped as follows: lower intermediate ($n=42$), intermediate ($n=41$), and advanced ($n=38$). Learners came from 17 different first language (L1) backgrounds. While all language backgrounds were represented in the general analysis by

proficiency level, a comparative analysis was also made of the performance of learners from five L1 groups with no evidence for multiple modifiers in the native language: Korean, Turkish, Arabic, Chinese, and Japanese. None of these languages has more than one level of the hierarchy instantiated: Korean, Japanese, and Turkish have no P-modifiers, and Arabic and Chinese have at most one type (for discussion, see Stringer et al. 2011). In short, these learners must project a syntactic hierarchy that is absent in the L1. The experiments were conducted in a language lab with a communal main screen and surround speakers, so that it was possible to synchronize aural and visual stimuli for all participants. A control experiment was conducted with 20 native speakers of English, aged 19–48, all of whom had spent most of their lives in the Midwest of the United States.

An original animated slideshow was designed to contextualize PPs and their modifiers, which took the form of a narrative variation on the story of Aladdin. PowerPoint slides of each scene were created by scanning hand-drawn images, arranging them in layers depending on the desired visibility of objects, and then animating the slides. The embedding of visual stimuli within a narrative was necessary in order to provide appropriate context for flow modifiers, which necessarily express continuation or return with specific reference to prior events. There were 26 slides in total: 3 initial example slides, 2 fillers for narrative coherence, 3 slides targeting onomatopoeia (outside the scope of the current discussion), and 18 test slides targeting the hierarchy of spatial modifiers. The complete animation is available for download from the author's professional webpage (http://www.indiana.edu/~dsls/faculty/stringer.shtml), and the linguistic materials subject to experimental manipulation are reproduced in Appendix I.

There were 6 examples of degree–flow, 6 of degree–trajectory, 3 of flow–trajectory, and 3 of degree–flow–trajectory: the stimuli were balanced as well as possible within narrative constraints. Prosody plays a pivotal role in the parsing of phrases with multiple modifiers: the insertion of pauses, shifting of stress, or other variance in the intonational contour results in the assignment of a different syntactic structure with a different semantic interpretation. The most appropriate prosody for stimuli was selected an item-by-item basis, based on native-speaker judgments, and sentences were embedded as sound files in the slides. In addition, participants' response sheets contained no written cues to reduce the risk of prosodic rephrasing during the experiment.

In advance of the experimentation, the vocabulary to be used was presented to the students for the purpose of making clear the meaning of each of the modifiers on the intended interpretations in English. Acquisition of the lexical items themselves was not the subject of investigation but rather their interaction with one another, so pains were taken to ensure that individual lexical meanings were understood and accessible. The most important aspect of the logic of this part of the experimentation was that students were taught modifiers *in isolation* (i.e., 1 modifier + PP), but they were tested on modifiers *in combination* (i.e., 2 or 3 modifiers + PP). The items on which they received instruction were the degree modifiers *right* and *straight*; the flow modifiers *on* and *back*; the trajectory modifiers *up*, *down*, *through*, *over*, and *across* in prepositional contexts; and the locative nouns *front* and *top*. As with the

test materials, the instructional materials were presented in the form of animated PowerPoint slides.

Experiment I was a preference task: following oral delivery of two variants of a sentence, learners circled (A) or (B) on their answer sheets, according to which sounded better. All linguistic stimuli were repeated once after a four-second pause. An example stimulus from Experiment I is given below.

10. Experiment I sample:

"He flies _____ over the camels." (**on straight/straight on*)
A B

Participants were told to listen to how the sentences sounded and to judge them immediately on the way they sounded, without considering other pronunciations. The order of presentation of target-like and non-target-like variants was systematically varied across stimuli.

Once the results were tabulated, a mixed design ANOVA was conducted with stimulus type as the within-subject factor and proficiency group and L1 as between-subject factors. The stimulus types were as previously described. The proficiency levels included the three learner groups and the native controls. L1 was assessed in terms of five L1 populations: Korean (36), Turkish (25), Arabic (15), Chinese (14), and Japanese (12), as well as the controls. The results for all four proficiency groups and the five L1 populations are given in Figs. 5.1 and 5.2. The *p*-values displayed indicate significance above chance and are unadjusted from *t*-statistics using estimated means and standard errors from the repeated measures ANOVA. The possibility of false-positive increases due to multiple comparisons was controlled by using Benjamini and Hochberg's (1995) method for false discovery rate. The results of the native-English controls, who served as both a proficiency group and a language group, are reported only once, in Fig. 5.1.

In brief, a main effect of stimulus type was found, but this was due only to the results for Type C. The results for Types A, B, and D did not reveal any significant differences. A main effect of proficiency was also found, due to two comparisons: Group 4 (the native controls) was significantly different from all other groups, and a small but significant difference was also found between Proficiency Groups 1 and 3, $t(78) = 2.878$, $p = .031$, $\eta^2 = .071$. With respect to L1 background, no significant differences were found between learner groups. There was no interaction between L1 background and proficiency level, and performance was remarkably uniform across the levels within each language.

A glance at the descriptive statistics immediately reveals a difference between the relatively accurate performance on Types A and B at all proficiency levels (A, 76 %, 74 %, 84 %; B, 71 %, 78 %, 81 %), the particularly non-target-like performance on Type C at all proficiency levels (41 %, 38 %, 44 %), and performance on Type D, which showed significant accuracy at all levels but improvement with general proficiency (64 %, 68 %, 76 %). The same pattern may be observed in the analysis by L1 group, with accurate performance on Types A and B by Korean, Turkish, Arabic, Chinese, and Japanese learners (A, 78 %, 73 %, 79 %, 77 %, 80 %; B, 78 %, 80 %, 82 %, 73 %, 60 %), poor performance on Type C (37 %, 40 %, 49 %, 48 %, 47 %),

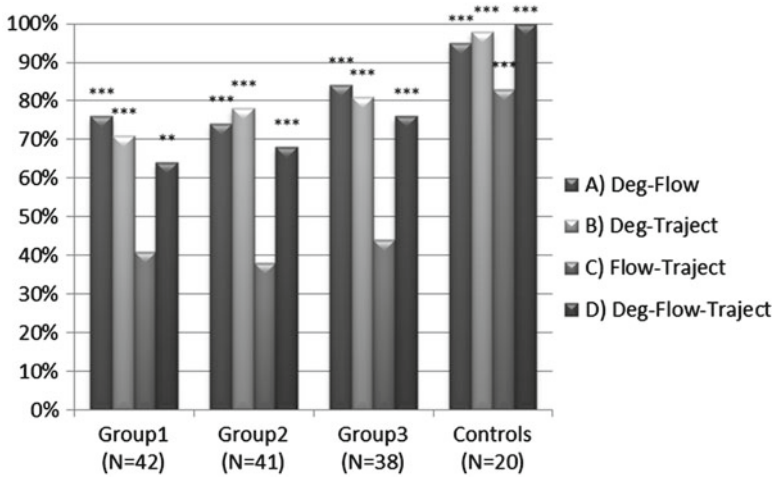


Fig. 5.1 Preference task accuracy scores by proficiency level, with significance above chance (***$p<0.001$, **$p<0.01$, *$p<0.05$)

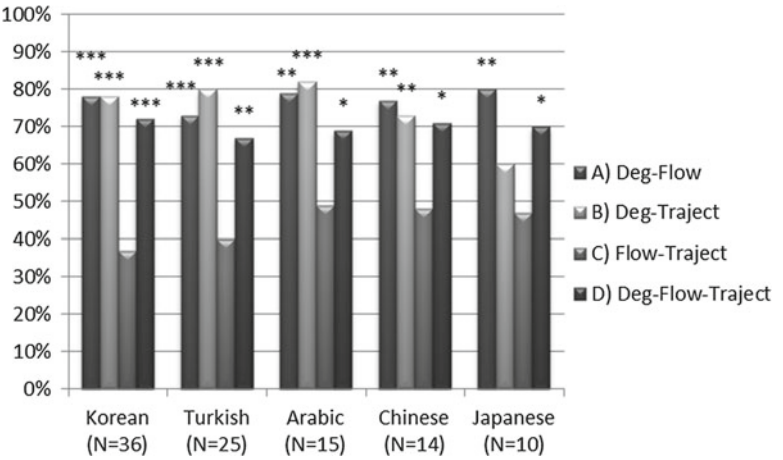


Fig. 5.2 Preference task accuracy scores by L1, with significance above chance (***$p<0.001$, **$p<0.01$, *$p<0.05$)

but with no improvement on the more complex ternary combinations of Type D as proficiencies were collapsed in the L1 data (72 %, 67 %, 69 %, 71 %, 70 %).

The high accuracy rates on Types A and B in evidence at all proficiency levels are particularly striking. In comparison, the generally weak performance on Type C calls out for further scrutiny. Although it might appear that the lower reaches of the hierarchy pose a higher degree of difficulty, analysis by individual stimuli reveals that poor performance on Type C might be alternatively explained in

terms of a lexical effect. In Experiment I, participants treated items (c1) *on through* and (c2) *on down* very differently from (c3) *back over*. Accuracy rates for the former were not significantly above chance, but scores on (c3) in Proficiency Groups 1, 2, and 3 were, respectively, 67 % ($p = .023$), 80 % ($p < .001$), and 82 % ($p < .001$). One possible reason for this discrepancy might be that the PPs modified by these combinations were headed by *to*: *on through [to the outside]*, *on down [to the ground]*, and *back over [to the waterfall]*. If participants rephrased the first two utterances prosodically as they considered their responses, the resultant forms could be interpretable with *through* or *down* either as verb particles or as P-modifiers, with *on* analyzed not as a modifier at all but as part of the complex preposition *onto*. This issue is revisited in discussion of Experiment II. Performance on the ternary combinations of Type D was significantly above chance, though showing an increase in accuracy with proficiency. This was to be expected given the increase in processing load. These examples were included to stretch learners, as native responses were so robust: the controls attained 100 % accuracy for this type.

To summarize the results, the learners were significantly outperformed by the controls in all cases, but they nevertheless showed rates of accuracy that were well above chance for the binary combinations of Types A and B, consistently underperformed on Type C (which contained a design flaw), and showed improvement and eventual accuracy on the ternary combinations of modifiers of Type D. There was no L1 effect.

5.3.2 Experiment II: Aladdin Grammaticality Judgment Task

Experiment II was conducted with the same participants to obtain binary judgments of grammaticality, rather than preference judgments, and to control for any possible task effects. Following the same criteria for exclusion, 13 participants were eliminated, leaving a total of 118 students. Again, results were analyzed in terms of three general proficiency groups: lower intermediate (levels 2–4, $n = 41$), intermediate (level 5, $n = 40$), and advanced (levels 6–7, $n = 37$). As before, learners came from 17 different L1 backgrounds, five of which were tested for L1 effects: Korean, Turkish, Arabic, Chinese, and Japanese.

The Aladdin animation was run again, but this time with different embedded sound files. For each slide, a male voice asked a question about the narrative, and a female voice answered by means of a sentence fragment, which participants judged as good or bad. The order of presentation of target-like and non-target-like variants was systematically varied across stimuli. An example stimulus from Experiment II is given below.

11. Experiment II sample:
    "Now where does he go?" "Straight back across the desert." (*ok*)
    A: good B: bad

The rationale behind the use of sentence fragments was to further control for prosodic reanalysis by subjects. For example, prosody can disambiguate between [*he flies back*] [*right into the desert*], which is grammatical, and *[*he flies* [*back right into the desert*]], which is not. An ungrammatical sentence fragment answer such as *[*back right into the desert*] provides a clear contrast to the grammatical [*right back into the desert*] and reduces the chance of the modifier being reanalyzed as a verb particle.

Again, a mixed design ANOVA was conducted with stimulus type as the within-subject factor and proficiency group and L1 as between-subject factors. As before, the analysis by proficiency included the three learner groups and the native controls, and L1 was assessed in terms of the five largest L1 populations: Korean (36), Turkish (25), Arabic (13, as compared to 15 in Experiment I), Chinese (14), and Japanese (12). The results for all four proficiency levels and the five L1 populations are given in Figs. 5.3 and 5.4.

As in Experiment I, a main effect of stimulus type was found, with Type C significantly different from the other three types. However, in Experiment II, significant differences were also found for Type D vs. Type A and Type D vs. Type B, both $p < .001$. There was no effect of proficiency level. With respect to language background, no significant differences were found between learner groups. Unlike in Experiment I, an interaction of stimulus type and language group was found, $F(12.286, 292.409) = 2.092$, $p = .017$, due to the poor performance of the smallest groups (Arabic and Japanese) on Types C and D. As before, there was no interaction between L1 group and proficiency, and performance was consistent across the levels.

Again, the descriptive statistics clearly indicate the difference between the relatively accurate performance on Types A and B at all proficiency levels (A: 76 %, 81 %, 80 %; B: 69 %, 77 %, 79 %) in comparison with the other two types. Type C stimuli produced a notably non-target-like performance at all proficiency levels (34 %, 39 %, 32 %), and Type D again showed improvement with general proficiency, although the accuracy levels were lower at each proficiency level than in Experiment I (58 %, 63 %, 68 %). In the previous experiment, the analysis of Type C results revealed considerably lower rates of accuracy for items (c1) *on through* and (c2) *on down* as compared to (c3) *back over*, and it was hypothesized that the first two might have been phonologically rephrased by participants, so that the displaced *on* could merge with the following preposition *to*, resulting in *onto*. However, in Experiment II, the results did not reveal the same discrepancy, with poor performance on all stimuli. It is notable that the control subjects also had difficulty with (c1) in particular, with scores of 50 % in Experiment I and 65 % in Experiment II, bringing down the average accuracy for this type. It remains a possibility that some controls rephrased this stimulus, deriving a legitimate structure: *He flew through, on to the outside*. Given the design flaw in juxtaposing *on* and *to* (albeit a legitimate combination in the target language), a more detailed examination of L2 knowledge of flow–trajectory must be left for future work, in which the *to*-PP might be replaced with, for example, an *into*-PP. The ternary combinations of Type D again proved more difficult for lower-level learners, although accuracy

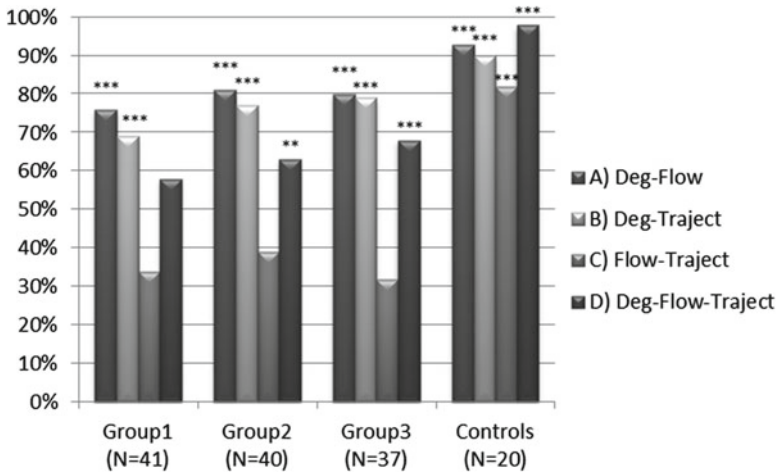


Fig. 5.3 GJ task accuracy scores by proficiency level, with significance above chance (***$p < 0.001$, **$p < 0.01$, *$p < 0.05$)

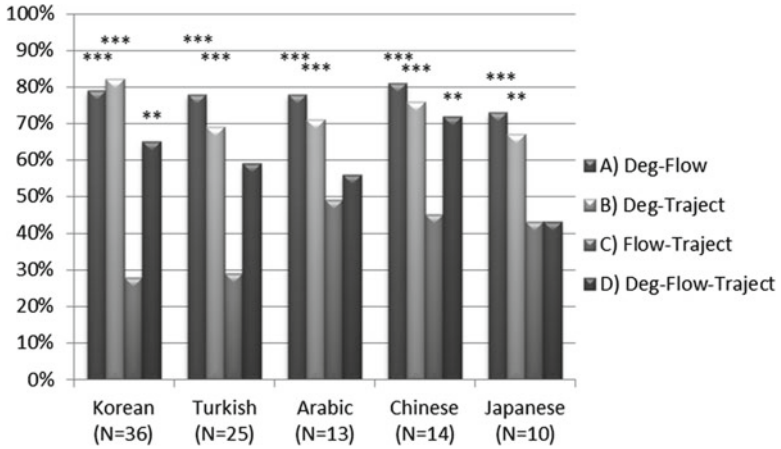


Fig. 5.4 GJ task accuracy scores by L1, with significance above chance (***$p < 0.001$, **$p < 0.01$, *$p < 0.05$)

generally improved with proficiency. Group 1 results were not significantly above chance, while Groups 2 and 3 showed increasingly significant rates of accuracy. This pattern conforms to our understanding of these combinations as involving a higher processing load. Native-speaker responses were unequivocal at 98 % accuracy.

To summarize the results, just as in the previous experiment, the learners revealed impressive rates of accuracy for the binary combinations of Types A and B, consistently underperformed on the flawed Type C, and showed increased accuracy with proficiency on the ternary combinations of Type D. Again, there was no L1 effect.

In order to uncover any task effects, a third ANOVA was conducted with task and stimulus type as within-subject factors and proficiency group and L1 as between-subject factors. A main effect of task was found, $F(1, 119) = 8.632$, $p = .004$, which may be understood on closer analysis of the performances of learners grouped by proficiency level and by language background. The proficiency groups displayed slightly different patterns of responses by task. Group 1 and the control group showed no task effect. Group 2 performed differently on Type A in task 1 and task 2: $t(41) = 2.142$, $p = .035$; however, the effect size was small ($\eta^2 = .037$), and there were no differences for B, C, and D. Group 3 performed differently on Type D ($t(36) = 2.774$, $p = .006$); again, the effect size was small ($\eta^2 = .061$), and there were no differences for A, B, and C. Despite the general task effect, this more detailed analysis in terms of proficiency levels reveals that the similarities in performance are more striking than the differences.

An analysis by L1 group furnishes a similar understanding. Of the 24 possible pairwise comparisons (6 language groups × 4 stimulus types), only three produced a significant difference: Arabic speakers only on Type D, Japanese speakers only on Type D, and Turkish speakers only on Type B. In conclusion, while the ANOVA did reveal a main effect of task, the results of the two experiments remain highly comparable.

Recall that the main purpose of the Aladdin experiments was to test for knowledge of the universal hierarchy in the toughest test case scenario: when the L1 has no multiple modifiers. An additional goal was to test whether the acquisition of lexical semantics was not only *necessary* but also *sufficient* for the acquisition of the syntax of P-modifiers. The implications of these results for pedagogy are clear in these two regards: even when the L1 has no instances of multiple P-modifiers, the hierarchy is naturally manifested in adult L2 acquisition, with rates of accuracy reliably and significantly above chance. Once the lexical semantics of individual modifiers was in place, this was sufficient for accuracy on the hierarchy, even at the lowest levels of proficiency, with no instruction on particular combinations necessary. The implication for high-advanced levels of instruction is that the syntactic complexity of modifier hierarchies actually comes for free; teaching materials should focus on lexical semantics rather than word order in this domain.

5.4 L2 Acquisition of Adjective Order

As mentioned earlier, L2 acquisition of adjective ordering restrictions (AOR) remains to be investigated, and their commonplace inclusion in ESL curricula is unprincipled: they appear at introductory, intermediate, or advanced levels of textbooks, and materials are not recycled. This is an uncharted area of L2 knowledge. However, recent syntactic research has expanded our understanding of language universals in this domain: the same syntactic hierarchy is found in all languages that allow direct hierarchical modification, with some systematic variation (e.g., Cinque 2010; Laenzlinger 2005; Scott 2002; Shlonsky 2004; Sproat and Shih 1991).

The second part of the project on the L2 acquisition of modifiers draws on such work and seeks to uncover what role, if any, this hierarchy plays in the acquisition of English as a second language (Stringer et al. In prep).

Although the data from these large-scale experiments are still under analysis, the interim findings are directly relevant to the question of how generative research can inform classroom pedagogy, and the following work-in-progress report extends the previous discussion by showing how generative research may shed light not only on language universals but also on the issue of L1 transfer. That the two Aladdin experiments did not reveal L1 transfer was not surprising, as the five L1s chosen for analysis were alike in the relevant respect: none of them had multiple modifiers. The syntax of adjectives, however, admits much more crosslinguistic variation than that of P-modifiers, and in approaching the design of these experiments, an attempt was made to test specifically for L1 influence. After a dismissive approach to L1 transfer in generative L2 research of the 1970s and 1980s (e.g., Dulay and Burt 1974; Krashen 1981), most researchers have come to believe that L1 influence has a major role to play in acquisition of syntax (Schwartz and Sprouse 1996), phonology (Strange and Schafer 2008), morphology (Montrul 2000), and the lexicon (Stringer 2010). However, the fact remains that in several subdomains, transfer is not apparent or at best has effects at later stages of development (see Hawkins 2001, for discussion). If L2 learners of English follow very different paths of development in their understanding of English adjective order, in ways predictable on the basis of their L1 grammars, this would support an approach to pedagogy which takes the L1 into account, ideally with teaching materials specific to particular L1 groups of learners. If, however, there is no L1 influence in this domain, this would in turn support the use of the same teaching materials irrespective of the language background of learners.

The L1 groups selected for investigation included Arabic-, Korean-, and Chinese-speaking learners of English, as these differ from English and from each other in interesting ways. Arabic has strict AOR in the relevant conditions, but post-nominally, and in the mirror order, as shown in the following example (Fassi-Fehri 1999: 107):

12. l-kitaab-u l-ʔaxḍar-u ṣ-ṣaġiir-u *Arabic*
the-book-NOM the-green-NOM the-little-NOM
"The little green book."

In contrast, Chinese and Korean usually mark adjectives with an "adjective marker," homophonous with a relative clause marker and glossed here as REL, in which case ordering restrictions do not apply.[3] These variations are based on a Chinese example provided by Sproat and Shih (1991: 565–566).

[3]The assumption here is that Korean adjectives are, in fact, relative clauses. The link between relative clauses and attributive adjectives is well-known, albeit complex and controversial (compare: *the boy who is tall* and *the tall boy*; *the train which is moving fast* and *the fast-moving train*). Crosslinguistically, it appears that adjectives marked with relative markers, just like relative clauses themselves, are not subject to ordering restrictions (compare: *the {great new/*new great} cafe*; *the café {which is great and which is new/which is new and which is great}*). For a review of analyses linking relatives and attributive adjectives, see Alexiadou et al. (2007).

13. hǎo-de yuán-de pánzi/yuán-de hǎo-de pánzi *Chinese*
good-REL round-REL plate/round-REL good-REL plate
"nice round plate"
14. metji-n dung-eun jeopsi/dung-eun metji-n jeopsi *Korean*
nice-REL round-REL plate/round-REL nice-REL plate
"nice round plate"

Thus far, Chinese appears to pattern like Korean; however, there is a crucial difference. While the relativizer is obligatory in Korean, it is optional for most monosyllabic adjectives in Chinese. When it is omitted, AOR robustly reappear (as if by magic), as shown below.

15. hǎo yuán pánzi/*yuán hǎo pánzi *Chinese*
good round plate/round good plate
"nice round plate"

An additional condition in Chinese is that direct adjectival modification is limited to two elements, one *nonabsolute* (i.e., gradable) adjective and one *absolute* (i.e., ungradable) adjective (Sproat and Shih 1991: 588–591). This restriction has also been observed in other languages, such as Italian (Cinque 1994: 95–96, fn.15), and will be relevant to interpretation of the experimental data discussed below.

The predictions formulated on the basis of L1 differences were as follows. First, Arabic learners might have initial mirror order but then reset the relevant parameter, understood here in terms of "snowball movement" (Shlonsky 2004). Second, on the assumption that attributive adjectives are hosted in dedicated functional projections above NP (Cinque 2010; Laenzlinger 2005; Scott 2002), Koreans might have difficulties with the instantiation of new functional categories and be subject to prolonged confusion. Third, there should be facilitation for Chinese learners in contrast to Korean learners regarding nonabsolute–absolute combinations.

In this preliminary L2 study of the relevant syntax and semantics, investigation was restricted to modification of object nominals (rather than event nominals) and to 14 of the proposed universal types, categorized in a simplified version of Laenzlinger's (2005) variant of the hierarchy: [$_{\text{evaluative}}$ opinion > [$_{\text{scalar physical property}}$ size > length > height > speed > depth > width > [$_{\text{measure}}$ temperature > wetness > age > [$_{\text{non-scalar physical property}}$ shape > color > nationality > material]]]]. At a higher level of categorization, nonabsolute adjectives were understood to precede absolute (i.e., non-scalar physical property) adjectives, and this distinction was also coded in the experimental design.

An experiment was administered to 204 ESL learners from 14 different L1 backgrounds, across 5 levels of proficiency, as well as 20 native controls, to examine knowledge of universals and possible L1 transfer effects. This was a binary preference task, with recorded oral delivery of 47 stimuli controlling for prosody and the answer sheets incorporating an original rebus design, such that images replaced the objects described. As instruction on all of the high-frequency adjectives was not possible prior to testing, images were used instead of gaps in written stimuli, to facilitate lexical retrieval. The idea of the rebus technique was taken not from adult word puzzles but from children's books. Rebus designs are quite common in early

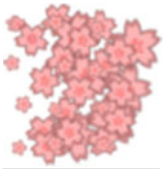
literacy texts, often being incorporated into poems and songs with which children are already familiar. Examples such as the following are easily constructed.[4]

16. Twinkle, twinkle, little  , how  wonder what you are  above the  so high, like a  in the sky.

This technique was adapted for the purposes of the experiment in order to furnish examples with combinations of two, three, and four adjectives, as in (17–19) below. (Note that the images in the actual experiment were in color.) Participants heard recordings of the full sentences (controlled for prosody) read once with one order of adjectives and once with the alternative order and then had 4 seconds to complete the forced preference task by circling either A or B.

17. Brian is talking on a  phone.
(A) *thin great* (B) *great thin*

18. The house has a  fence.
(A) *long white wooden* (B) *wooden white long*

19. Daniel likes these  flowers.
(A) *plastic pink small nice* (B) *nice small pink plastic*

Test materials included 14 binary combinations of nonabsolute–absolute (e.g., opinion–material, *dangerous stone steps*), 8 binary combinations of nonabsolute–nonabsolute (e.g., size–age, *big old car*), 2 binary combinations of absolute–absolute (e.g., color–material, *pink plastic umbrella*), 8 further combinations of nonabsolute–nonabsolute specifically targeting scalar physical properties (e.g., length–height, *long high wall*), and 4 combinations each of 3 adjectives (e.g., *big old stone tower*) and 4 adjectives (e.g., *beautiful long white wooden chair*).

While the complete analysis of the results with appropriate statistical analysis is not yet complete, as testing of controls is still in progress, initial results from the learner groups have already furnished striking patterns, confounding expectations, and pointing toward unexpected implications for classroom pedagogy. The relevant

[4]The example in (16) is a popular English children's song: "Twinkle, twinkle, little star / How I wonder what you are / Up above the world so high / Like a diamond in the sky."

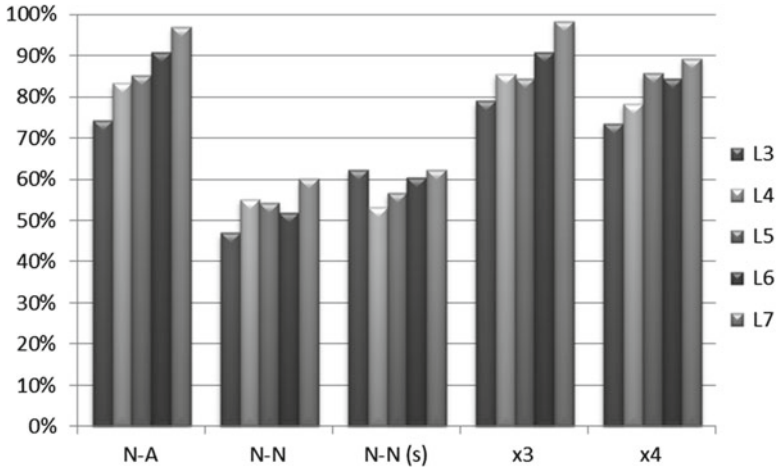


Fig. 5.5 Experiment III: Preference task, results by proficiency group (levels 3–7). Percentage accuracy on adjective combinations: nonabsolute–absolute (N-A), nonabsolute–nonabsolute (N-N), nonabsolute–nonabsolute scalar (N-N (s)), strings of 3 adjectives (x3), and strings of 4 adjectives (x4)

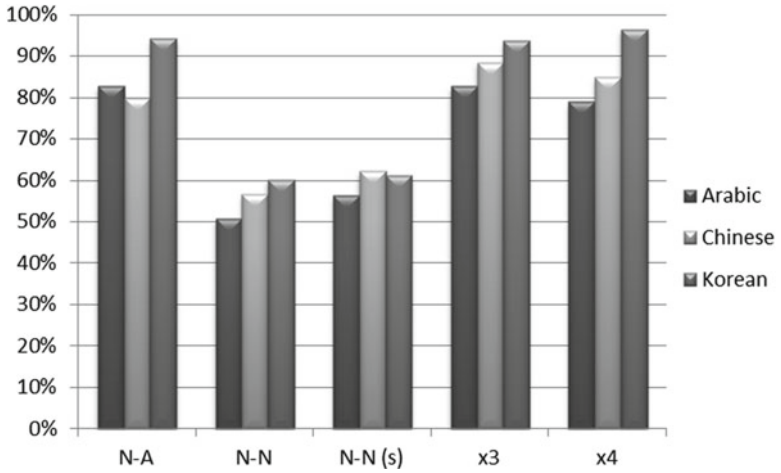


Fig. 5.6 Experiment III: Preference task, results by L1 group. Percentage accuracy on adjective combinations: nonabsolute–absolute (N-A), nonabsolute–nonabsolute (N-N), nonabsolute–nonabsolute scalar (N-N (s)), strings of 3 adjectives (x3), and strings of 4 adjectives (x4)

interim results are provided in Fig. 5.5, which shows accuracy scores in terms of the 5 levels of proficiency, and Fig. 5.6, which contrasts the accuracy scores for Arabic ($N=119$), Chinese ($N=23$), and Korean ($N=21$) learners.

A repeated measure ANOVA reveals three sets of findings. First, let us consider the results in terms of proficiency level. All proficiency levels, from level 3 (TOEFL

PBT <400) to level 7 (TOEFL PBT >500), display robust knowledge of the ordering of nonabsolute and absolute adjectives, with accuracy improving as the proficiency level increases (74 %, 83 %, 85 %, 91 %, 97 %). This was an unexpected finding: although this distinction is relevant for languages such as Chinese as discussed earlier, Korean and Arabic learners of English have no specific evidence either in the L1 or the L2 that this distinction is more important than any other in the adjectival hierarchy. In stark contrast, the performance of participants is at or just above chance for combinations of two nonabsolute adjectives, even at higher levels of proficiency. The differences between accuracy on nonabsolute–absolute combinations and nonabsolute–nonabsolute combinations (of both subtypes) are significant for all comparisons ($p < .001$).

Second, we may revisit the hypotheses regarding L1 effects. All three groups revealed knowledge of the nonabsolute–absolute distinction (Arabic, 83 %; Chinese, 80 %; Korean, 94 %), and none performed above chance on combinations of two nonabsolute adjectives. Arabic learners did not show any evidence of a reliance on the mirror order, either at lower or higher stages of proficiency. In addition, the projected difference between L1 Korean and L1 Chinese never materialized. Rather than being at a disadvantage due to the lack of any evidence for AOR in the L1, the Korean learners actually outperformed the Chinese learners on the nonabsolute–absolute distinction. However, when proficiency was factored into the analysis, there was no significant difference between the two language groups. Thus the hypothesis that L1 transfer should lead to different paths of development, and thus different types of teaching materials in idealized learning environments, was roundly falsified.

Third, performance on ternary and quaternary combinations was significantly above chance at all levels and improved over the proficiency range; though given the poor results on adjectives matched for "absoluteness," we must question whether these high scores reflect knowledge of more complex manifestations of the hierarchy or simply a successful test strategy based on knowledge of absoluteness (one alternative always began with a nonabsolute adjective, and one with an absolute adjective).

The two main conclusions from this early stage of analysis with potential for direct application to classroom pedagogy are as follows. First, AOR do not come for free, beyond the nonabsolute–absolute distinction. Unlike the hierarchy of P-modifiers, which appears to manifest itself naturally in the course of acquisition, the adjectival hierarchy seems to be much more complicated for learners to acquire in cases where elements are matched for absoluteness. While the nonabsolute–absolute distinction is plausibly part of Universal Grammar, teaching materials must be developed to advance students' knowledge of other combinatorial possibilities within the hierarchy. Second, there appears to be a complete absence of crosslinguistic influence. Despite intriguing differences in L1 grammars, it appears that the knowledge L2 learners bring to the acquisition process is common to learners from markedly different language backgrounds. They all show a remarkably robust understanding of the nonabsolute–absolute distinction yet reveal identical patterns of persistent confusion with regard to

other binary combinations. An important practical implication is that teaching materials need not be tailored to the L1s of the learners.

5.5 Conclusion

Generative approaches to second language research have the potential to furnish valuable insights for classroom pedagogy, even if pedagogy is not the primary focus of such research. The purpose of this chapter was to highlight the implications of formal research on the syntax of modifiers for syllabus design and materials development. The pedagogical implications drawn from the two sets of studies briefly outlined here involve two areas of obvious relevance to language instruction: the nature of language universals and the potential role of L1 transfer. The first series of experiments examined the nature of universals in the syntax of P-modifiers and concluded that this hierarchy is naturally manifested, even when there is no evidence for it in the L1, as soon as the lexical semantics of individual modifiers has been acquired. Thus, as this aspect of grammar is incorporated into advanced materials, explicit instruction on the hierarchy is not necessary: the acquisition of syntax in this case is driven by the acquisition of vocabulary.

A work-in-progress report was also provided on a large-scale experiment targeting the syntax of attributive adjectives. Two pedagogical implications are readily apparent from the initial analysis of these results. First, the totality of the hierarchy does not appear to be gifted to L2 learners as part of the universals providing linguistic scaffolding to the L2 acquisition process. It is theoretically significant that knowledge of the nonabsolute–absolute division in the hierarchy is impressively robust, even though this distinction does not exist in all L1s and is not more readily apparent than any other distinction in the hierarchy of English adjectives. However, participants' performance on combinations of adjectives matched for absoluteness remained at chance right up through the highest levels tested, not only for combinations of scalar physical properties, which was somewhat expected (e.g., length–depth, *long thin pencil*; depth–width, *deep wide river*), but also across more fundamental divisions in the hierarchy (e.g., opinion–age, *great new haircut*; size–age, *big old car*). Targeted instruction on these combinations is therefore necessary, although arguably through enhanced input rather than through the memorization of metalinguistic rules. To date, adjective order has been invariably taught in the form of a single, rule-oriented chapter in a grammar book, with no recycling. Perhaps the promotion of implicit learning might be more effective, by exposing learners to relevant input through systematic inclusion of binary combinations of adjectives in course materials across the syllabus. The second implication emerging from this study is that contrary to initial hypotheses, there appears to be no evidence whatsoever of L1 transfer in this domain. Thus, despite significant crosslinguistic variation in adjectival syntax, the design of teaching materials can proceed on the assumption that all learners follow the same path of development regardless of language background.

There is currently an apparent chasm between UG-inspired studies of L2 acquisition and classroom-oriented L2 research. Researchers in each tradition tend to frequent different conferences and write for different audiences. There has been a somewhat dismissive attitude toward pedagogy in generative circles, perhaps arising in part from the historical need to gain independence from schools of education and engage more fully with other disciplines such as linguistics and psychology, while in research on L2 pedagogy, there has been a growing conviction that generative approaches are irrelevant to the classroom. However, such perceptions are unfortunate, and they clearly damage the potential for researchers to engage in interdisciplinary work in applied linguistics. In this chapter, I have argued that formal research whose primary goals are not pedagogical in nature can nevertheless have interesting, practical, and direct implications for language instruction in the classroom, a conclusion brought home by all the contributions to this volume. It is to be hoped that such studies encourage awareness of the need to reconnect formal L2 research with language teaching and foster interdisciplinary understanding within a more unified field of second language studies.

Acknowledgements This research was conducted with the collaboration of colleagues in the Department of Second Language Studies as well as teachers and students in the Intensive English Program (IEP) at Indiana University. Many thanks especially to Kathleen Bardovi-Harlig, Doreen Ewert, Michelle Fleener, Marlin Howard, and Heidi Vellenga. Thanks also to Stephanie Dickinson of the Indiana Statistical Consulting Center (ISCC) for her invaluable help with data analysis. The experimental work on modifiers was coauthored with graduate students who, in their own careers, are building bridges between formal L2 research and classroom pedagogy: Beatrix Burghardt, Jung-Eun Choi, Khanyisile Dlamini, Cleyera Martin, Hyun-Kyoung Seo, and Yi-Ting Wang.

5.6 Appendix I: The Aladdin Slides

Example Slides

1. Here is Aladdin. Here is the wizard. Here is a very beautiful lamp.
2. Aladdin and the wizard are going to the cave.
3. Aladdin takes the magic lamp from the wizard.

Stimulus Slides

4.	He flies right up out of the cave.	[DEG [TRAJECT]]
5.	He flies on through to the outside.	[FLOW [TRAJECT]]
6.	He flies straight on over the camels.	[DEG [FLOW]]
7.	He flies right on up into the clouds.	[DEG [FLOW [TRAJECT]]]
8.	He goes crash into the birds.	ONOMATOPOEIA
9.	The lamp falls right back down onto a tree.	[DEG [FLOW [TRAJECT]]]
10.	The lamp falls on down to the ground.	[FLOW [TRAJECT]]
11.	Aladdin flies right down in front of a waterfall.	[DEG [TRAJECT]]
12.	He flies whoosh over a lake.	ONOMATOPOEIA

13.	Aladdin flies straight on under a rock.	[DEG [FLOW]]
14.	Aladdin flies right on across the desert.	[DEG [FLOW]]
15.	He flies straight through into the city.	[DEG [TRAJECT]]
16.	Oh no! The lamp is not in his bag!	FILLER
17.	Aladdin flies straight back across the desert.	[DEG [FLOW]]
18.	He flies right back under the rock.	[DEG [FLOW]]
19.	He flies back over to the waterfall.	[FLOW [TRAJECT]]
20.	He flies straight down behind the tree.	[DEG [TRAJECT]]
21.	Aladdin flies right out from behind the tree.	[DEG [TRAJECT]]
22.	The wizard falls splash into the lake.	ONOMATOPOEIA
23.	Aladdin comes straight out from behind the waterfall.	[DEG [TRAJECT]]
24.	He flies straight back across to the rock.	[DEG [FLOW]]
25.	He flies right back into the desert.	[DEG [FLOW]]
26.	Aladdin touches the lamp. The genie appears!	FILLER

References

Alexiadou, A., L. Haegeman, and M. Stavrou. 2007. *Noun Phrase in the generative perspective*. Berlin: Mouton de Gruyter.

Azar, B.S., and S.A. Hagen. 2006a. *Basic English grammar*, 3rd ed. White Plains: Pearson.

Azar, B.S., and S.A. Hagen. 2006b. *Basic English grammar*, 3rd ed.: Workbook. White Plains: Pearson.

Benjamini, Y., and Y. Hochberg. 1995. Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society, Series B (Methodological)* 57(1): 289–300.

Chomsky, N. 1957. *Syntactic structures*. The Hague: Mouton.

Cinque, G. 1994. On the evidence for partial N-Movement in the Romance DP. In *Paths towards Universal Grammar: Studies in honor of Richard S. Kayne*, ed. G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi, and R. Zanuttini, 85–110. Washington, DC: Georgetown University Press.

Cinque, G. 1999. *Adverbs and functional heads: A cross-linguistic perspective*. Oxford: Oxford University Press.

Cinque, G. 2010. *The syntax of adjectives*. Cambridge, MA: MIT Press.

Dulay, H., and M. Burt. 1974. Natural sequences in child language acquisition. *Language Learning* 24: 37–53.

Emonds, J.E. 1976. *A transformational approach to English syntax*. New York: Academic.

Fassi Fehri, A. 1999. Arabic modifying adjectives and DP structures. *Studia Linguistica* 53: 105–154.

Gass, S.M. (with J. Behney and L. Plonksy). 2013. *Second language acquisition: An introductory course*, 4th ed. New York: Routledge.

Gradman, H. 1971. The limitations of contrastive analysis predictions. *Proceedings of The Pacific Conference on Contrastive Linguistics and Language Universals (PCCLLU): University of Hawai'i Working Papers in Linguistics* 3/4, 11–16. Honolulu, HI: Department of Linguistics, University of Hawai'i.

Grant, L. 2010. *Well said*, 3rd ed. Boston: Heinle.

Hawkins, R. 2001. *Second language syntax: A generative introduction*. Oxford: Blackwell.

Krashen, S.D. 1981. *Principles and practice in second language acquisition*. London: Prentice-Hall.
Lado, R. 1957. *Linguistics across cultures: Applied linguistics for language teachers*. Ann Arbor: University of Michigan Press.
Lado, R., and C.C. Fries. 1954. *English pronunciation: Exercises in sound segments, intonation and rhythm*. Ann Arbor: University of Michigan Press.
Laenzlinger, C. 2005. French adjective ordering: Perspectives on DP-internal movement types. *Lingua* 115: 645–689.
Maurer, J. 2000. *Focus on grammar: An advanced course for reference and practice*, 2nd ed. White Plains: Longman.
Montrul, S. 2000. Transitivity alternations in second language acquisition: Toward a modular view of transfer. *Studies in Second Language Acquisition* 22: 229–274.
Schachter, J. 1974. An error in error analysis. *Language Learning* 24: 205–214.
Schwartz, B.D., and R.A. Sprouse. 1996. L2 cognitive states and the full transfer/full access model. *Second Language Research* 12: 40–72.
Scott, G.-J. 2002. Stacked adjectival modification and the structure of nominal phrases. In *Functional structure in DP and IP: The cartography of syntactic structures*, vol. 1, ed. G. Cinque, 91–120. Oxford: Oxford University Press.
Shlonsky, U. 2004. The form of Semitic noun phrases. *Lingua* 114: 1465–1526.
Sproat, R., and C. Shih. 1991. The cross-linguistic distribution of adjective ordering restrictions. In *Interdisciplinary approaches to language*, ed. C. Georgopoulos and R. Ishihara, 565–593. Dordrecht: Kluwer.
Strange, W., and V.L. Schafer. 2008. Speech perception in second language learners. In *Phonology and second language acquisition*, ed. J.G. Hansen Edwards and M.L. Zampini, 153–191. Philadelphia: John Benjamins.
Stringer, D. 2005. *Paths in first language acquisition: Motion through space in English, French and Japanese*. Doctoral dissertation, University of Durham.
Stringer, D. 2010. The gloss trap. In *Linguistic relativity in SLA: Thinking for speaking*, ed. Z.-H. Han and T. Cadierno, 102–124. Clevedon: Multilingual Matters.
Stringer, D., B. Burghardt, H.-K. Seo, and Y.-T. Wang. 2011. Straight on through to Universal Grammar: Spatial modifiers in second language acquisition. *Second Language Research* 27: 289–311.
Stringer, D., J.-E. Choi, K. Dlamini, and C. Martin. In prep. *Adjective ordering restrictions in English as a second language*. Unpublished manuscript, Indiana University.
Thewlis, S.H. 2007. *Grammar dimensions 3: Form, meaning, and use*, 4th ed. Boston: Heinle & Heinle.

Chapter 6
The Syntax-Discourse Interface and the Interface Between Generative Theory and Pedagogical Approaches to SLA

Elena Valenzuela and Bede McCormack

6.1 Introduction

For almost 25 years, generative research on second-language acquisition has examined second-language learners' understanding of various linguistic properties such as island effects (White 1989), subjacency constraints (Schachter 1989), case and tense (Lardiere 1998), IP (Haznedar 2001) and interface properties (White 2009). Since generative SLA research such as this typically looks at the acquisition of some property of grammar that is not explicitly taught in the classroom, little work has been done that investigates how classroom language teachers might accelerate acquisition of these structures in an instructed L2 setting.

In an attempt to address this gap between theory and practice, the current study examines the acquisition of UG-constrained properties related to the syntax/pragmatics and discourse/pragmatics interface. In particular, we examine patterns of topic-comment knowledge among two groups of learners: L1 English speakers and L1 Spanish speakers, each learning the other's language. Since topic-comment structures are primarily found in spoken language rather than written, they are less commonly taught in L2 classrooms, with the exception of Spanish clitics and clitic placement which feature regularly in SSL lessons.

By taking a balanced look at the difficulties these two groups of learners face in topicalising object nouns in their respective target languages, we hope to show

E. Valenzuela (✉)
Modern Languages and Literatures, University of Ottawa, Ottawa, ON, Canada
e-mail: evalenzu@uottawa.ca

B. McCormack
Department of Education and Language Acquisition, LaGuardia Community College, City University of New York, Room B234RR, 31-10 Thomson Avenue, Long Island City, NY 11101, USA
e-mail: bmccormack@lagcc.cuny.ed

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_6,

that those aspects of topicalisation which were contextualised and taught explicitly – clitics and clitic placement – were acquired and understood at significantly higher levels than aspects which were not explicitly taught. Thus, this study attempts to create a link between generative theory and the second-language classroom by examining the following two research questions: First, can generative linguistics research inform language teaching? Second, given the complexity of interface properties, what if anything is taught explicitly?

In the next section, we briefly outline key issues surrounding research into interface properties and then discuss phenomena related to topicalisation in particular in Section 6.3. Section 6.4 describes the study and findings, and we conclude with a discussion of implications for the classroom.

6.2 Interface Properties

At the centre of interface properties is the assumption that languages are complex and that when processing or producing a given construction, there are several domains at work at the same time. For example, the syntax/pragmatics interface is when a construction (syntax) is either acceptable or ruled out given the *context* (pragmatics/discourse) within which it is uttered. Over the last decade, generative research on second-language (L2) acquisition has given increasing attention to the syntax/pragmatics and/or discourse interface (Montrul 2004; Serratrice et al. 2004; Valenzuela 2005; Lozano 2006; Belletti et al. 2007; Rothman 2009; Slabakova and Ivanov 2011; among many others). Despite this, most generative research into interface properties has, until recently, been *theoretical* and has not addressed the pedagogical implications of targeting interface properties in the L2 classroom.

Interface properties, such as the syntax/discourse interface, are interesting to generative researchers because they are a subtle property of the grammar that is effortlessly acquired by native speakers of a language despite potentially confusing input. Generative grammar has argued that such language subtleties are acquired with the help of universal grammar which imposes rules and constraints on the input. There has been much literature arguing that explicit 'form-focused' instruction is beneficial for the language learner (Doughty and Williams 1998; VanPatten 1996; Benati 2001; among others). However, when dealing with interface properties we have, in a way, *form* interfacing with *meaning* interfacing with *context* resulting in complicated language instruction. Topic-comment constructions, discussed in Section 6.3, provide an interesting diagnostic because the *form* and *meaning* aspects of the construction are the subject of explicit instruction in the classroom, but *context* is not. In the following section, we will discuss topic-comment constructions in English and Spanish and look at the extent to which it can be taught in the classroom.

6.3 Topic-Comment Structures in Spanish and English

Topicalisation is a property found at the interface between syntax, semantics and discourse-pragmatics. It is a strategy that a speaker uses to reintroduce something previously mentioned in the discourse into the conversation. Thus, a 'topicalised' noun, in languages like Spanish and English, is typically moved from canonical object position to the leftmost position in the sentence but is still connected to the position in the clause from which it originated. The topic is the constituent in the left periphery which is connected to the rest of the sentence (Rizzi 1997, 2002). Typically, items in the left periphery are discourse-related, and their occupying the left peripheral position is motivated by the context in which the sentence is uttered. The sentence, then, is the 'comment' or what is being said about the topic. For example, in (1) the discourse antecedent is 'a group of friends', and one of the group, *Juan*, is reintroduced into the discourse by moving to left peripheral position in the following topic-comment structure. The topicalised element, *Juan*, is commented on in the rest of the sentence. Juan is connected to the rest of sentence with the clitic (type of object pronoun) *lo* which refers back to *Juan*:

1. [Context: I have **a group of friends** that I have known for many years.]
   A **Juan**$_i$, lo$_i$ conocí en París cuando era estudiante.
   To Juan, CL I-met in Paris when was student
   'John, I met in Paris when I was a student.'

In this way, the syntax (constituent order; moved constituent to the left periphery) interfaces with the discourse (the context identifies the topic that is being reintroduced and thus topicalised). The topicalised element is set apart from the rest of the sentence by an intonational fall, and there is also a connectivity requirement between the topic and the comment. This topicalisation by means of left dislocation is licensed through discourse properties, thus the syntax-discourse interface. In Spanish, as in other languages with clitics (Italian, Greek, etc.), a clitic in the lower clause connects the topicalised element to the rest of the sentence and links the topic to the comment thus 'clitic left dislocation' (CLLD) as in Cinque 1990. Topic-comment structures, a form of topicalisation, in Spanish, are expressed as clitic left-dislocation (CLLD) constructions, as in (1).

In English, on the other hand, there are no clitics with the same object pronoun value as in Spanish. In the case of English, then, the non-clitic topic-comment structure is referred to as 'contrastive left dislocation' (CLD) as in (2) (Anagnostopoulou 1997):

2. [Context: I have a group of friends that I have known for many years.]
   John, I met in Paris when I was a student.

Interpretation of a left-dislocated topic in Spanish is dependent on the semantic notion of specificity (Liceras et al. 1992; Arregi 2003; Valenzuela 2005, 2006). Namely, the presence or absence of the clitic in the comment can result in a change in the interpretation of the topicalised element itself as being either specific or

non-specific. When the clitic is present, as in the CLLD construction in (1), the topic is interpreted as specific, but in the absence of a clitic in the lower sentence, the topic is interpreted as non-specific, as in (3):

3. [Context: I eat fruit and vegetables in order to stay healthy.]
   Manzanas, como todos los días.
   Apples, I-eat all the days
   'Apples, I eat everyday.'

Following Uriagereka (1995), we assume that the clitic carries a [+specific] semantic feature which, when connected to a left-dislocated referent, results in a difference in interpretation of the topicalised element. That is, the presence or absence of the clitic renders the topic either specific or non-specific. In this way, Spanish CLLD constructions are interpreted as having a specific topicalised element whereas CLD constructions are interpreted as having a non-specific topicalised element. With respect to specificity and topic-comment structures, the syntactic module of the grammar interfaces with the semantic module of grammar which is found in the semantic feature carried by the clitic. To summarise, CLLD = clitic = specific topic, while CLD = no clitic = non-specific topic.

Topic-comment structures are, therefore, very complex constructions that involve at least three modules of the grammar interacting simultaneously: syntax (clitic placement, left-dislocation construction), discourse/pragmatics (licensing the topic-comment) and semantics (specificity of the clitic). The complexity of topic-comment structures can result in rather confusing input since the appropriateness of CLLD (specific topic) or CLD (non-specific topic) is derived from the interaction of context with the syntax rather than syntax alone. That is, the learner's task is to determine that while both constructions are 'correct', one or the other construction is ruled out based on the context alone. While learners receive form-focused and meaning-focused instruction, it is context-focused instruction that is additionally required for a complete examination in the L2 classroom. Context-focused instruction would allow the teacher to clarify on the appropriateness of these construction based on the context in which they are uttered.

6.3.1 Learnability and Interface Properties

Complexity results in confusing and potentially ambiguous input which in turn has been shown to be problematic, even at very advanced stages in development, in many different types of language acquisition contexts: simultaneous bilingual acquisition (Müller and Hulk 2000; Montrul 2004, 2010), post-childhood acquisition (Hertel 2003; Lozano 2006; Valenzuela 2005, 2006) and L1 language loss (Tsimpli et al. 2004). As discussed in the previous section, topic-comment structures are particularly complex given the fact that they involve not only the syntax/semantics interface (clitics and clitic placement interacting with specificity) but also the syntax/discourse interface (clitic left dislocation and the licensing of the

topic-comment structure). Thus, the question remains, what does a second-language (L2) learner have to acquire in order to successfully use and interpret topic-comment structures in Spanish or English, and how can that acquisition be supported in the L2 classroom? That is, what is the learnability issue? In the present section, we will examine the three modules involved in topic-comment and the extent to which they are addressed in the classroom.

The generative analysis of topic-comment structures sees Spanish topic-comment structures as having essentially three modules of the grammar which interact with one another simultaneously. First, the syntax module involves the left-dislocation construction, clitics (object pronouns) and the correct clitic placement in the sentence. While clitics are interpreted as object pronouns, they do not appear in the same position as object pronouns as in English. Thus, there cannot be positive transfer from English with respect to the syntax (Chap. 2 by Bruhn de Garavito, this volume). Second, the semantic module involves specificity. The [+specific] feature of clitics is a semantic feature which is encoded in the clitic itself, and so the presence or absence of the clitic can derive a specific or non-specific interpretation. When a clitic is coindexed with a topicalised element, that topic is interpreted as 'specific'. Conversely, when the topic appears without a clitic, the topicalised element is interpreted as non-specific. Third, the discourse module involves licensing the reintroduction of a discourse antecedent (old information) into the discourse.

With respect to English topic-comment structures, there are two modules of the grammar that interact. The syntax module involves left dislocation of the topicalised element, while the discourse module involves licensing the reintroduction of old information into the discourse.

With respect to learnability, an L1 English learner of L2 Spanish will hear both the CLD and the CLLD forms in the input but will have to learn the subtle interpretive differences (specificity distinction) from the semantic feature associated with the clitic. The semantic feature of specificity is encoded in the clitic but the learner will have to sort out the appropriateness of the clitic or non-clitic form from hearing it in context. Moreover, topicalisation is not a high-frequency construction, and so the learner will have to be exposed to extensive input in order to derive the specificity contrast. Transfer from the L1 English will give them the CLD structure and associated syntactic constraints but will not give them the specificity distinction since English does not have clitics. On the other hand, L1 Spanish learners of L2 English have to lose the interpretive distinction associated with the presence or absence of clitic since English does not encode specificity semantically in topic-comment structures. Given these distinctions, classroom instruction that includes highly contextualised examples of the various structures, combined with explicit explanations of why one structure is preferred over another in a given situation, would promote acquisition of the target forms.

To summarise, an L1 English learner of L2 Spanish will have to acquire the syntax (CLLD structure), a syntax-semantics interface property where the presence or absence of the clitic can result in an interpretive difference and a syntax-discourse interface property whereby the context of the utterance will require either the clitic

or non-clitic forms. An L1 Spanish learner of L2 English will transfer the CLD structure from their L1 and learn to extend it to contexts in which an L1 English speaker would not use it. In the following section, we will discuss the results from a bidirectional study conducted on the acquisition of topic-comment structures in both English and Spanish that tested CLLD and CLD constructions and their interpretive properties.

6.4 Methodology

6.4.1 Research Questions

We have seen that topic-comment structures in both English and Spanish involve interface properties and, therefore, present a level of complexity that can potentially pose difficulties for a language learner and/or acquirer. The data and results presented in this section reflect this complexity and lead us to suggest that overt instruction of interface properties can, in fact, be explicitly taught.

6.4.2 Participants

For this chapter, we are re-examining a subset of data from a larger study (Valenzuela 2005) which was bidirectional (study 1: L1 English/L2 Spanish; study 2: L1 Spanish/L2 English) and had two participant groups, respectively. Participants for study 1 consisted of 15 L1 English speakers of L2 Spanish who had had their first exposure to Spanish after puberty (i.e. post-childhood) in a foreign language classroom setting. Based on self reports, they learned Spanish via a mix of communicative and form-focused instruction. Participants were from England, Canada and United States and were living in Spain at the time of testing. The L2 participants were end-state, near-native speakers of L2 Spanish. Near-nativeness was established following similar procedure to that implemented in White and Genesee (1996) and Montrul and Slabakova (2003) whereby speech samples from all participants (controls and L2) were extracted from short oral interviews. The speech samples were randomised and both L1 and L2 Spanish speakers were mixed together. The tapes were given to two impartial native Spanish speakers who were asked to listen to the speech sample several times, each time evaluating the 'nativeness' of the individual speaker for syntax, morphology, pronunciation, vocabulary and overall fluency on a scale where 1 = least like a native speaker of Spanish and 10 = native speaker of Spanish. Average scores for the speech samples of the L1 Spanish speakers ranged from 8.5 to 10. Based on the native speakers' score margin, L2 speakers whose average scores were between 8.5 and 10 were deemed near-native. Their score on the

Table 6.1 Summary of participant information

Study 1	Study 2
15 L1 English/end-state L2 Spanish	17 L1 Spanish/end-state L2 English
Average age at first exposure: 18 (SD: 3.2)	Average age at first exposure: 16 (SD 0.8)
5+ years living in L2 environment	5+ years living in L2 environment
Near-nativeness interviews (White and Genesee 1996)	Near-nativeness interviews (White and Genesee 1996)
Living in Spain at time of testing	Living in Canada or Spain at time of testing
Post-childhood learners of L2 Spanish	Post-childhood learners of L2 English
25 monolingual Spanish control	15 monolingual English control

near-nativeness interview together with the age of first exposure and number of years living in a Spanish environment was the criteria for inclusion in the study. In addition to the L2 Spanish/L1 English experimental group, 25 monolingual L1 Spanish participants were tested in Spain as a control group. Participants for study 2 underwent the same criteria for inclusion in the experiment. Participants for this study consist of 17 Spanish speakers of L2 English who had had their first exposure to English after childhood in an EFL setting and also received a mix of communicative and form-focused instruction. Participants were from various Spanish-speaking countries and were living in either Canada or Spain at the time of testing. In all cases, their work was conducted in English, and in most cases both work and home life were conducted in English. The L2 participants were near-native[1] speakers of L2 English. In addition to the L2 English/L1 Spanish experimental group, 15 monolingual L1 English participants were tested in Canada as a control group. A summary of the participant information is shown in Table 6.1 above.

6.4.3 Tasks

We report on results from two tasks for studies 1 and 2, respectively, each of which targeted topic-comment constructions in both specific and non-specific contexts. The tasks were an oral sentence selection task (comprehension data) and a Sentence Completion Task (written production data).

[1]Learners were arguably at a steady state in their acquisition. Although learners continue to learn the TL, even after instruction ceases, the participants in both Study 1 and 2 had been living in the L2 environment for 5 or more years. Under the generative tradition, in the absence of a longitudinal study which would empirically test possible improvement in the language, this would constitute strong evidence in favour of considering them at a steady state. We argue, although perhaps controversially, that we can conceive of learners' states of acquisition, and, for pedagogical reasons, it is useful to do so.

6.4.3.1 Sentence Selection Task

The sentence selection task provides comprehension data for the specific and non-specific interpretation of topic constructions and the appropriateness of a topic-comment structure in a given context.

In this task, participants listened to a context story and were asked to select the most appropriate concluding sentence. Context stories forced either a specific or a non-specific interpretation of the target topic in the concluding sentence. For example:

Spanish:
Lola está haciendo los deberes de la universidad pero se acaba de dar cuenta que le faltan unos apuntes importantes. Mira por todas partes en la biblioteca, en su habitación, y en la clase pero…

a. Esos apuntes, no encuentra.
b. Esos apuntes, no los encuentra. ← desired response
c. Ni *a* ni *b*
d. Ambas a y b

English:
Lola is doing her homework. However, she just noticed that she is missing some important class notes. Lola looks in the library, in her room and in the classroom but…

a. Those class notes, she cannot find. ← desired response
b. Those class notes, she cannot find them.
c. Neither (a) nor (b).
d. Both (a) and (b).

6.4.3.2 Sentence Completion Task

The Sentence Completion Task provides written production data for the specific and non-specific interpretation of discourse context, left-dislocated topic constructions and correct placement of clitics (in the case of the Spanish tasks).

For this task, participants read a context story and were then presented with a sentence that was begun, and they were asked to complete it. Context stories forced either a specific or a non-specific interpretation of the target topic in the concluding sentence. For example,

Spanish:
El Sr Fernández ve mucho la televisión. No ve programas de deportes sino ve programas policíacos y documentales. Le pregunto por qué no ve programas de deportes y me explica:

'Deportes, _no miro_ porque los encuentro increíblemente aburridos.'

English:
Mr. Fernández watches a lot of television. He does not watch sports but rather he watches detective shows and documentary programmes. I ask him why he never watches sports and he explains:

'Sports, _I don't watch_ because I find them incredibly boring.'

Given the complex nature of topic-comment constructions, we predict that our tests will have higher levels of accuracy on aspects of the constructions for which explicit instruction is received. Specifically, learners of L2 Spanish will be more accurate with the CLLD structure and clitic placement (syntax) than with the specificity distinction. L2 learners of English will have trouble letting go of the specificity distinction from their L1 Spanish.

6.4.4 Results

The data from study 1 (L2 Spanish) are presented in sections 6.4.4.1 (Sentence Selection Task) and 6.4.4.2 (Sentence Completion Task). The data from study 2 (L2 English) follow in sections 6.4.4.3 (Sentence Selection Task) and 6.4.4.4 (Sentence Completion Task).

6.4.4.1 Study 1, L2 Spanish: Sentence Selection Task

In Table 6.2 we see a summary of the results for the Spanish sentence selection task. As can be seen in Table 6.2, both groups chose the sentence with the clitic (CLLD construction) in [+specific] contexts the majority of the time. However, in [−specific] contexts, where the clitic option should be ruled out, the L2 Spanish group chose the clitic option significantly more times than the L1 Spanish control group. A two-way ANOVA shows that there is a between-group significant difference in

Table 6.2 Sentence selection task: % choice of sentence with clitic

	[+specific] contexts	[−specific] contexts
L2 Spanish group	100 %	37 %
L1 Spanish group	94 %	14 %

Table 6.3 Sentence Completion Task: % suppliance of clitic

	[+specific] contexts	[−specific] contexts
L2 Spanish group	89 %	53 %
L1 Spanish group	100 %	17 %

Table 6.4 Sentence selection task: % choice of sentence with pronoun

	[+specific] contexts	[−specific] contexts
L2 English group	30 %	7 %
L1 English group	8 %	4 %

both the L1 Spanish group's and the L2 Spanish group's treatment of specific versus non-specific topics with respect to preference for the '*clitic*' responses (*L1 Spanish* ($F(1, 88) = 435.044$, $p < 0.01$; *L2 Spanish* ($F(1, 56) = 66.936$, $p < 0.01$))).

6.4.4.2 Study 1, L2 Spanish: Sentence Completion Task

In Table 6.3 we have a summary of the results for the Spanish Sentence Completion Task. As can be seen in Table 6.3, both groups correctly provided clitics with specific left-dislocated topics in main clause environments. The L2 Spanish group, however, differed from the L1 Spanish group in [−specific] contexts where they provided a clitic significantly more often than the control group. But they are also distinguishing between [±specific] contexts. A single-factor ANOVA showed no significant difference between groups for topics in [+specific] contexts ($F(1,38) = 6.441$, $p = 0.015$). However, in [−specific] contexts a single-factor ANOVA showed a significant difference between the groups ($F(1,38) = 19.113$, $p < 0.01$). The tendency on the part of the near-natives was to provide a clitic in non-specific contexts which is consistent with their results in the previous tasks and indicates that they are not totally distinguishing specificity.

The tendency in the L2 Spanish group is to prefer the clitic in [−specific] contexts (53 %) whereas the L1 group preferred no clitic (17 %). In both production and comprehension, the L2 Spanish group accepts and produces topic-comment structures as well as provides correct placement of the object clitic. Thus, the syntax appears to have been acquired, but the specificity distinction (interpretive differences) is not target-like and therefore appears to be more problematic for these learners. These results seem to be in line with the notion that explicit instruction facilitates acquisition.

6.4.4.3 Study 2, L2 English: Sentence Selection Task

In Table 6.4 we see a summary of the results for the English Sentence Selection Task. As can be seen in Table 6.4, the L1 English group does not distinguish between specific and non-specific contexts for clitics as they treat both contexts the same.

Table 6.5 Sentence Completion Task: % suppliance of pronoun

	[+specific] contexts	[−specific] contexts
L2 English group	54 %	36 %
L1 English group	29 %	17 %

The L2 English group, however, prefers pronouns with topic-comment constructions that are in [+specific] contexts. A one-way ANOVA shows that there is a within-group significant difference in the L2 English group's treatment of specific versus non-specific topics with respect to the preference for '*pronoun*' responses (specific 30 %; non-specific 7 %) ($F(1,30) = 10.054$, $p < 0.01$). This suggests that they are transferring a specificity distinction from their L1 Spanish into their L2 English.

6.4.4.4 Study 2, L2 English: Sentence Completion Task

In Table 6.5 we see a summary of the results for the English Sentence Completion Task. In this written production task, we see that the L1 English group is low in suppliance of pronouns for sentences in [+specific] contexts. A within-group ANOVA shows no significant difference in the L1 English group's treatment of specific and non-specific tokens ($F(1,28) = 2.514$, $p = 0.124$). While the L2 English group supplied topic constructions with pronouns in [+specific] contexts (*mean* 54 %) more often than in [−specific] contexts (*mean* 36 %), a within-group single-factor ANOVA does not show a statistically significant difference in their suppliance of pronouns on the specific versus non-specific tokens ($F(1,32) = 3.295$, $p = 0.079$).

6.5 Discussion and Implications for the L2 Classroom

The data for both the L2 Spanish and L2 English studies show the following for the three modules of the grammar involved in topic-comment constructions. With respect to the syntax module, the L2 Spanish group is both accepting and producing CLLD constructions, and they have correct word order for clitics. The L2 English group also correctly accepts and produces CLD. This accuracy can be attributed to the traditional form-focused instruction they received in their home countries. A high level of syntactic accuracy on topicalised object NPs is expected from explicit instruction and positive evidence. As for the semantic module, the L2 Spanish group indeed differentiated between [±specific] contexts. However, there was an overall tendency to overproduce/prefer the clitic in non-specific contexts. Oversuppliance of clitics across tasks in contexts where the no-clitic option is preferred by L1 speakers reflects a lack of native-like sensitivity to the semantic feature of specificity. This failure to differentiate between the [±specific] feature may be the result of over instruction of the cliticised option (see Selinker's 1972 five processes of fossilisation), as instructors may judge this a more 'difficult'

structure to learn. This is an example of a surface feature (placing of the clitic with the object NP), being singled out for practice, while the more central, UG-based constraints on specificity are overlooked. An informed instructor would realise the importance of not judging a structure as 'difficult' simply because it has a seemingly more complex rule (i.e. add clitic to fronted object NP). Instances of interpreting a topicalised element as non-specific ([−specific]) which require that the clitic not be placed with the left-dislocated NP are equally and arguably more difficult to master. Knowing when to leave out an element is just as important as knowing when to include one. Finally, with respect to the discourse module, topic-comment structures were both accepted and appropriately produced. However, in both cases, the notion of topic-comment can be positively transferred from their L1.

Let us return to our research questions. Research question 1 asked how generative acquisition research can inform language teaching. In this chapter, we have summarised results from a study conducted under the generative framework on the L2 acquisition of an interface property. What was shown was that both groups of L2 speakers had native-like performance of certain aspects of the syntax of left dislocation. The SSLers accurately judged and produced clitics, and the ESLers were native-like in the construction of left dislocations. In contrast to this accuracy, both groups diverged from the L1 speakers judgments on the discourse feature. That is, despite grammatical accuracy, they were non-target-like in their understanding of the specificity feature, resulting to overuse of [+specific] judgements. That is, they were grammatically accurate but contextually unacceptable. Identifying this mismatch between syntax and discourse properties is an example of how generative linguists can contribute to increased L2 learning outcomes by drawing classroom teachers' attention to how L1 transfer of learners' understanding of specificity can contribute to non-native-like competence in this domain. Once teachers are aware of the semantic notion of specificity, they can then push their learners to notice which way they must move to acquire target-like forms, namely, L2 Spanish learners must acquire the feature, and L2 English learners must lose the feature. Judging from this mismatch, we can see that in addition to receiving explicit instruction on the syntax of left dislocation, learners also need instruction on specificity, rather than simply being left to infer an understanding of this feature from ambiguous and possibly infrequent input regarding the contexts in which CLLD or CLD are appropriate.

Research question 2 was that, given the complexity of interface properties, what if anything can be taught explicitly? Explicit instruction is provided for the syntax in these complex structures, and with that knowledge comes the [+specific] feature of the clitic (in the case of CLLD constructions). While explicit instruction is only provided for the clitic placement, frequency of exposure to the language over time allows the learner to acquire sensitivity to the semantic notions. That is, with increased exposure, the frequency with which the learner will hear a particular pattern in the input (e.g. CLLD construction uttered in a [+specific] context) will increase thereby leading to convergence on TL sooner. It is here that an informed classroom teacher can provide an increased amount of input for learners. By understanding the specific/non-specific distinction himself/herself, the instructor is in a

position to provide carefully selected, authentic input that increases learners' opportunities to process the syntactic forms and increase their connection to meaning and interpretation (VanPatten 1996).

6.6 Conclusion

In this study, we have attempted to demonstrate that syntax – in this case left dislocation – can be acquired to an advanced level through classroom instruction. However, we have also tried to show that, despite their syntactic accuracy being judged native-like by linguistically naïve native speakers of the given language, these informants exhibit non-target-like judgments in their knowledge of a less obvious linguistic property, in this case the specificity feature. By going into classrooms, working with teachers and collecting real learner data, generative linguists, with their insights into underlying properties of language that typical L2 teachers may not be aware of, have much to offer second-language classroom instructors.

References

Anagnostopoulou, E. 1997. Clitic left dislocation and contrastive left dislocation. In *Materials on left dislocation*, ed. E. Anagnostopoulou, H. van Riemsdijk, and F. Zwarts, 151–192. Amsterdam: John Benjamins.

Arregi, Karlos. 2003. Clitic Left Dislocation is Contrastive Focus. In: *U. Penn Working Papers in Linguistics: Proceedings of the 26th Annual Penn Linguistics Colloquium,* 9.1: 31–44. Philadelphia: Penn Linguistics Club.

Belletti, A., E. Bennati, and A. Sorace. 2007. Theoretical and developmental issues in the syntax of subjects: Evidence from near-native Italian. *Natural Language and Linguistic Theory* 25: 657–689.

Benati, Alessandro. 2001. A comparative study of the effects of processing instruction and output based instruction on the acquisition of the Italian future tense. *Language Teaching Research* 5(2): 95–127.

Doughty, C., and J. Williams. 1998. *Focus on form in classroom second language acquisition*. Cambridge: Cambridge University Press.

Haznedar, Belma. 2001. The acquisition of the IP system in child L2 English. *Studies in Second Language Acquisition* 23(1): 1–39.

Hertel, Tammy. 2003. Lexical and discourse factors in the second language acquisition of Spanish word order. *Second Language Research* 19(4): 273–304.

Lardiere, Donna. 1998. Case and tense in the 'fossilized' steady state. *Second Language Research* 14(1): 1–26.

Liceras, J.M., B. Soloaga, and A. Carballo. 1992. Los conceptos de tema y rema: problemas sintácticos y estilísticos de la adquisición del español. *Hispanic Linguistics* 5(1–2): 43–88.

Lozano, C. 2006. The development of the syntax-discourse interface: Greek learners of Spanish. In *The acquisition of syntax in romance languages*, ed. V. Torrens and L. Escobar, 371–399. Amsterdam: John Benjamins.

Montrul, Silvina. 2004. Subject and object expression in Spanish heritage speakers: A case of morphosyntactic convergence. *Bilingualism: Language and Cognition* 7: 125–142.

Montrul, Silvina. 2010. How similar are adult second language learners and Spanish heritage speakers? Spanish clitics and *word order*. *Applied Psycholinguistics* 31: 167–207.

Montrul, S., and R. Slabakova. 2003. Competence similarities between native and non-native speakers an investigation of the preterite-imperfect contrast in Spanish. *Studies in Second Language Acquisition* 25(3): 351–398.

Müller, N., and A. Hulk. 2000. Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism: Language and Cognition* 3: 227–244.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. L. Haegeman, 281–337. Dordrecht: Kluwer Academic.

Rizzi, Luigi. 2002. Locality and left periphery. In *Structures and beyond. The cartography of syntactic structures*, vol. 3, ed. A. Belletti, 1–27. Oxford: Oxford University Press.

Rothman, Jason. 2009. Pragmatic deficits with syntactic consequences? L2 pronominal subjects and the syntax-pragmatics interface. *Journal of Pragmatics* 4: 951–973.

Schachter, Jacqueline. 1989. Testing a proposed universal. In *Linguistic perspectives on second language acquisition*, ed. S. Gass and J. Schachter, 73–88. Cambridge: Cambridge University Press.

Selinker, L. 1972. Interlanguage. *International Review of Applied Linguistics* 10: 209–230.

Serratrice, L., A. Sorace, and S. Paoli. 2004. Subjects and objects in Italian-English bilingual and monolingual acquisition. *Bilingualism: Language and Cognition* 7: 183–206.

Slabakova, Roumyana, and Ivan Ivanov. 2011. A more careful look at the syntax-discourse interface. *Lingua* 121: 637–651.

Tsimpli, Ianithi, Antonella Sorace, Caroline Heycock, and Francesca Filiaci. 2004. First language attrition and syntactic subjects: A study of Greek and Italian near-native speakers of English. *International Journal of Bilingualism* 8: 257–277.

Uriagereka, Juan. 1995. Aspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry* 26(1): 79–124.

Valenzuela, Elena. 2005. *L2 ultimate attainment and the syntax/discourse interface: the acquisition of topic constructions in non-native Spanish and English*. Unpublished PhD dissertation, McGill University.

Valenzuela, Elena. 2006. L2 end state grammars and incomplete acquisition of Spanish CLLD constructions. In *Special volume in honour of Lydia White*, ed. R. Slabakova, S. Montrul, and P. Prévost, 283–304. Amsterdam: John Benjamins.

VanPatten, Bill. 1996. *Input processing and grammar instruction*. Norwood: Ablex.

White, Lydia. 1989. Island effects in second language acquisition. In *Linguistic theory in second language acquisition*, ed. S. Flynn and W. O'Neill, 144–172. Dordrecht: Kluwer Academic.

White, Lydia. 2009. Grammatical theory: Interfaces and L2 knowledge. In *The new handbook of second language acquisition*, ed. W.C. Ritchie and T.K. Bhatia. Leeds: Emerald.

White, Lydia, and Fred Genesee. 1996. How native is near-native? The issue of ultimate attainment in adult second language acquisition. *Second Language Research* 12: 233–265.

Part II
GenSLA and Classroom Research

Chapter 7
Alternations and Argument Structure in Second Language English: Knowledge of Two Types of Intransitive Verbs

Makiko Hirakawa

7.1 Typical L2 Errors and the Two Types of Intransitive Verbs

The present chapter discusses second language (L2) knowledge of intransitive verb constructions in English. Focusing on unique L2 errors where certain kinds of intransitive verbs appear in passive constructions (e.g., *the earthquake was happened last night*), I argue that learners of English who make such errors in fact know that there are two types of intransitive verbs but that due to some morphological properties in English, explicit instruction may be necessary for learners to overcome the errors. I will present an experimental study which explores the effects of instruction on this peculiar, nontarget form in real classroom situations and discuss its results in terms of how interlanguage grammar changes after explicit instruction.

Errors such as those exemplified in (1) have been frequently reported for English speakers with various first language (L1) backgrounds including Japanese, Chinese, Korean, German, and French (Balcom 1997; Chiba 1998; Hirakawa 1995, 2003a; Hubbard 1994; Kellerman 1978, 1983; Oshita 1997, 2000; Rutherford 1987; Shomura 1996; Yip 1995; Zobl 1989).

1. a. The most memorable experience of my life was happened 15 years ago.
   b. Most of people are fallen in love and marry with somebody.
   c. My mother was died when I was just a baby.

(Zobl 1989: 204)

We call these nontarget forms "overpassivization" errors, with two important points about the errors worth noting. One is that overpassivization errors are confined to one type of intransitive verbs, that is, so-called unaccusative verbs, which will be

M. Hirakawa (✉)
Faculty of Language and Literature, Bunkyo University, Minami-Ogishima, Koshigaya, Saitama, Japan
e-mail: hirakawa@koshigaya.bunkyo.ac.jp

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_7,

explained in more detail below. The other point is that the errors persist even among advanced L2 learners. In Section 7.1.1, we briefly review the Unaccusative Hypothesis (Burzio 1986) which divides intransitive verbs into two types: unaccusative and unergative verbs. We also discuss two constructions among others which motivate the Unaccusative Hypothesis. Section 7.1.2 reviews the auxiliary selection hypothesis proposed by Sorace (2000) which suggests that languages may vary in terms of what counts as an unaccusative and unergative verb. In Section 7.1.3, we show some empirical evidence that learners of English and Japanese actually distinguish between the two types of intransitive verbs.

The two-way classification of intransitive verbs was proposed over 20 years ago and has been extensively examined in generative grammar as well as other linguistic frameworks, such as relational grammar. That L2 errors have been confined to only one type of intransitive verbs has also been discussed within the field of second language acquisition. Nevertheless, this two-way classification of intransitive verbs is rarely paid attention to by language teachers or taught in language classrooms. Hence, one goal of this chapter is to show that the unaccusative/unergative distinction proposed in the theory of generative grammar may be very helpful for language teachers when they teach the basic properties of verbs in a second language.

7.1.1 The Unaccusative Hypothesis (Burzio 1986)

The division of intransitive verbs into two types—unaccusative and unergative—is known as the Unaccusative Hypothesis (Burzio 1986). Examples of the two types are given in (2).

2. a. John died. (unaccusative)
   <Theme>
   b. John ran. (unergative)
   <Agent>

On the surface, (2a) and (2b) look quite similar, consisting of a subject *John* and an intransitive verb *died* or *ran*. These two types of verbs are traditionally classified into one group as intransitive verbs. Each verb requires only one noun phrase (NP) as its argument; hence, the sentence is composed of a subject NP and a verb phrase (VP), containing an intransitive verb. Despite their surface similarity, there are different properties associated with each class of verbs in terms of the semantic and syntactic information that the subject NP carries. First, in terms of semantic roles, *John* in (2a) (i.e., the unaccusative subject) bears a Theme (or Patient[1]) role, whereas *John* in (2b) (i.e., the unergative subject) bears an Agent role. When we consider

[1] A Theme role is often assigned to an inanimate object, while a Patient to an animate object. As this distinction is not important to the claims made in this chapter, we generally use the label Theme for objects.

transitive sentences such as (3), Agent is the role that the subject typically carries, while Theme is the one that the object usually carries.

3. a. John pushed Tom.
   <Agent> <Patient>
   b. John broke the window.
   <Agent> <Theme>

This observation provides a different way to categorize verbs across the traditional transitive-intransitive distinction. The subjects of unergative and transitive verbs can be grouped together bearing Agent roles, on the one hand, while on the other hand, the argument of unaccusative verbs in subject position and the object of transitive verbs can be grouped together as they both bear Theme roles.

Because of this similarity in functional role as Theme, linguists have questioned the syntactic position of the single argument of the unaccusative verb claiming that the subject of the unaccusative verb is underlyingly an object. The claim is that the argument initially occurs in object position, but then moves to subject position. Let us consider verbs such as *break*, which can alternate, appearing as a transitive (4a.) or intransitive verb (4b.).

4. a. John broke the window.
   <Agent> <Theme>
   b. The window broke.
   <Theme>

The intransitive counterpart of the transitive verb *break* in (4b) is classified as unaccusative. Although *the window* occurs in subject position, it is assumed to originate in direct object position. Given that the subject of an unaccusative verb is underlyingly an object, we can keep the representation of the unaccusative verb *break* parallel to the representation of the transitive verb *break*. In sum, the initial structures of the transitive, unaccusative, and unergative verbs can be schematized as shown in (5) (Burzio 1986). In the case of unaccusative (5b), *the window* in object position will eventually end up in the subject position, via a syntactic movement operation.

5. a. [John [$_{VP}$ broke *the window*]]. transitive
   b. [[$_{VP}$ broke *the window*]]. unaccusative
   c. [John [$_{VP}$ ran]]. unergative

In fact, various linguistic phenomena suggest that the unaccusative subject is like a transitive object, whereas the unergative subject is like a regular, transitive subject. The phenomena include the resultative construction, pseudopassives, cognate objects, the X's way construction, and the *there*-construction in English (Levin and Rappaport Hovav (L&RH) 1995, 2005; Perlmutter and Postal 1984).[2] The resultative

[2]Due to space limitation, we only discuss the first two constructions in the present chapter. See Levin and Rappaport Hovav (1995) for argumentation on the X's way construction and the *there*-construction.

construction and pseudopassives will be briefly reviewed below. First, examine the sentences in (6) with resultative phrases in italics.

6. a. John broke the glass *into pieces*.
   b. John painted the wall *white*.

Resultative phrases, such as *into pieces* and *white*, describe a resultant state that comes about because of the action denoted by a verb. In a transitive sentence such as (6a), it is the sentence object *the glass* that became *into pieces*, but not the subject *John*. In other words, (6a) means that John broke the glass, and as a result of his breaking, the glass has resulted in a state of being in pieces. It does not mean that John broke the glass, and as a result of his breaking, John became into pieces. The same applies to (6b); John painted the wall, and as a result, *the wall* became *white*, but it is not *John* who became *white*, although it is possible to imagine the situation where John became white after his painting the wall. It appears then that resultative phrases modify sentence objects but not sentence subjects.

Now consider the two types of intransitive verbs in (7) and (8).

7. a. The river froze *solid*.
   b. Mary's hair grew *long*. (L&RH 1995: 35 (2))
8. a. *Dora shouted *hoarse*.
   b. *Mary danced *tired*. (L&RH 1995: 39 (19a))

The examples in (7) and (8) with resultative phrases display a different picture. The resultatives in italics can modify the sentence subjects in (7) but not in (8). In (7a), *the river* became *solid* as a result of its freezing; and in (7b) *Mary's hair* became *long* as a result of its growing. In contrast, (8a) cannot mean Dora became hoarse as a result of her shouting; similarly, (8b) cannot mean that Mary became tired after dancing.[3] How can we explain the different behavior of intransitive verbs that we observe? The resultative phenomena suggest that the surface subjects in (7) behave on a par with transitive objects in (6), that is, they can be modified by resultative phrases, whereas the surface subjects in (8) are like transitive subjects, that is, they cannot be modified by resultative phrases. If we assume that surface subjects of unaccusative verbs are originally objects and that those of unergatives are subjects as they appear, the different behavior can be explained.

Another linguistic phenomenon which motivates the two-way classification of intransitive verbs is the so-called pseudopassives. They are also known as the prepositional passive construction. Examples are shown in (9) and (10). The sentence in the parentheses shows the active sentence that corresponds to each pseudopassive.

9. a. *The package was accumulated on by dust. (P&P (1995): 100 (55a))
      [Dust accumulated on the package]
   b. *The bed was fallen on by dust. (P&P (1995): 100 (55g))
      [Dust fell on by dust]

[3]Note that these phrases can be subject-oriented depictive phrases; that is, they can be predicated of the subject, describing the state of the subject when the action denoted by the verb took place. Thus, (8a) could potentially mean that Dora shouted when she was hoarse, and (8b) could mean that Mary danced when she was tired (Levin and Rappaport Hovav 1995).

10. a. The bed was slept in by the shah. (P&P (1995): 100 (54a))
[The shah slept in the bed.]
b. This pool has been swum in by the last three world record holders.
[The last three world record holders have swum in this pool.]
(L&RH (1995): 157 (59b))

The sentences in (9) are unacceptable but those in (10) are acceptable. In other words, the pseudopassive construction is incompatible with unaccusative verbs in (9), whereas it is compatible with unergative verbs in (10). Perlmutter and Postal argue that the ungrammaticality of the passives in (9) is explained given the Unaccusative Hypothesis (Burzio 1986). That is, unaccusative verbs involve NP movement of the single argument from the object position to the subject position. Hence, no further movement of any phrase into the subject position should be allowed.

7.1.2 Degrees of Unaccusativity (Sorace 2000)

Sorace (2000) proposes the universal Auxiliary Selection Hierarchy, based on the general distribution of the two auxiliaries *be* and *have* (*essere* "be" vs. *avere* "have" in the case of Italian) in perfective aspect and past tense observed in Romance and Germanic languages. Italian examples in (11) show the contrast between unaccusative and unergative in terms of auxiliary selection; that is, the former requires *essere* "be," while the latter *avere* "have."

11. a. Maria é arrivata. (unaccusative)
Maria is arrive
"Maria has arrived/Maria arrived."
b. Maria ha telefonato. (unergative)
Maria has telephoned
"Maria has telephoned/Maria telephoned."

The perfective auxiliary selection with two types of intransitive verbs shows a systematic variability within and across languages. Sorace (2000) proposed the Auxiliary Selection Hierarchy in (12), where gradient hierarchies exist and core unaccusative and core unergative verbs at the top and the bottom, respectively, are distinguished from more peripheral verbs in between.

12. The Auxiliary Selection Hierarchy (ASH, based on Sorace 2000: Table 1)

Core Unaccusative selects BE (least variation)

Change of location (e.g., *arrive, fall*)
Change of state (e.g., *happen, appear*)
Continuation of a preexisting state (e.g., *last, stay*)
Existence of state (e.g., *exist, belong*)
Uncontrolled process (e.g., *cough, sneeze*)
Controlled motional process (e.g., *walk, run*)
Controlled non-motional process (e.g., *play, work*)

Core Unergative selects HAVE (least variation)

It should be noted that telicity[4] and agentivity or controllability (i.e., an action or event denoted by a verb can be controlled by a person or thing) are the two key notions on which Sorace based the hierarchy. Sorace claims that telic change (+telic) strongly correlates with BE and agentive controlled process (+control) strongly correlates with HAVE. The choice of auxiliaries for intermediate verbs is susceptible to variation, and different languages may have different cutoff points along the hierarchy. Based on the hierarchy, we may predict that learners will have more problems with core unaccusatives, that is, verbs which are placed higher, than peripheral unaccusatives, that is, those which are placed lower along the hierarchy—that is, if it is unaccusativity or telicity that causes "passive" unaccusative errors. The hierarchy has been examined in L2 acquisition of Italian, French, English, and Japanese (Hirakawa 2006; Shomura 2002; Sorace 2000; Sorace and Shomura 2001; Yusa 2003; Yusa 2003), for example, reported that Japanese-speaking learners of English incorrectly accepted overpassivization errors with core unaccusatives more often than with peripheral unaccusatives and unergatives, thus arguing that the learners were sensitive to the hierarchy.

Results of these previous studies suggest that the distinction of unaccusative and unergative verbs may not be categorical and that there is a "graded" nature within unaccusativity among languages, which may affect the L2 acquisition of unaccusative verbs. The experimental study in the present chapter includes four different types of unaccusative and unergative verbs along the hierarchy.

7.1.3 The Challenge for L2 Learners

As we have seen in Section 7.1.1, intransitive verbs are classified into unaccusative and unergative verbs. The distinction is syntactic as well as semantic in terms of the sole argument of the verb. When we specifically consider the acquisition of unaccusative verbs in English, L2 learners are faced with a logical problem, that is, there is a gap between L2 input and the linguistic properties in the target grammar that the learners need to acquire. Intransitive sentences they encounter in classroom or in the input will in general look all alike. That is, what they observe in the input are surface structure representations of the verbs; thus, they consist of the subject and the verb, irrespective of the two types of intransitive verbs. As can be seen from the examples in (2a) and (2b), repeated in (13) below, just from the surface strings, nothing would tell the learner about the distinct properties of the surface subjects. That is, even though *John* appears as a subject in (13a), it has the properties of an object as compared to the *John* in subject position in (13b). These properties are subtle; moreover, this kind of information is not explicitly provided to the learners.

[4]Telicity denotes an action or event that has an endpoint, being complete. For example, 'Susan ate an apple' is telic and the event was finished, while 'Susan ate apples' is atelic and the event was not finished (Slabakova 2001).

Thus, it appears that the linguistic input they receive underdetermines their knowledge of unaccusativity and that this situation involves a logical problem.

13. (=2). a. John died. (unaccusative)
b. John ran. (unergative)

As briefly stated above, the overpassivization errors observed among various L2 learners of English are confined to unaccusative verbs. This observation has been taken as evidence for learners' awareness of the difference between the types of intransivitive verbs and has further been taken as evidence for knowledge of the syntactic movement involved in English unaccusatives. That is, learners know the object status of the unaccusative subjects, correctly generating the single argument of an unaccusative verb in the object position, but they overgeneralize passive morphology to unaccusative verbs when promoting the argument to the subject position. Results from the experimental studies using grammaticality judgment tasks further show that L2 learners fail to reject incorrect passive unaccusatives (Oshita 1997, 2000; Hirakawa 1995). Since these experimental studies focused on the learners' knowledge of surface forms, Hirakawa (2003a) further examined their knowledge of deep unaccusativity; that is, object status of unaccusative subjects in initial syntactic structure, using two constructions: resultatives and pseudopassives.

Hirakawa found that intermediate Japanese-speaking learners of English in general distinguished the (un)grammaticality of the unaccusative vs. unergative verbs in terms of the two constructions; therefore, these L2 data proved that learners observed the unaccusative/unergative distinction in initial syntactic structure.

It should be further noted that a number of studies have shown that intransitive/transitive alternations cause problems to learners of various languages including English, Japanese, Spanish, Italian, and Turkish (Matsunaga 2005; Montrul 1997, 1999, 2000; Shomura 2002; Shomura-Isse 2006; Sorace 1995, 2000; Yip 1995). Even though overpassivization errors reported by Zobl (1989) (exemplified in (1) above) represent the errors with non-alternating unaccusative verbs, learners appear to have difficulty with the alternating unaccusatives (i.e., the intransitive form of alternating verbs (e.g., (14b) as well). The verb *melt* alternates between a transitive (14a) and an intransitive (14b).

14. a. John melted ice.
b. Ice melted.

Note that passives with the alternating verbs would never be incorrect (i.e., *The ice was melted (by John, by sun, etc.*). Previous findings suggest L2 learners often tended to choose the short passive (i.e., *Ice was melted.*) rather than the intransitive sentence (i.e., *Ice melted.*) when there was no potential agent involved in the context. In such situations, native English speakers overwhelmingly chose the intransitive sentence (Hirakawa 1995, 2003a, b). Both alternating and non-alternating unaccusative verbs are included in the present experimental study, as reported in the next section.

7.2 A Study in the Classroom and Its Implications

As we have seen above, overpassivization errors are frequently observed with one type of intransitive verb, that is, unaccusatives, but not with unergatives. We have also seen that the errors are found even among intermediate to advanced L2 learners. In this section, we will discuss developmental stages in the L2 acquisition of unaccusative verbs in English and the effects of instruction. In particular, I will report on an experimental study which examined the effects of instruction in acquiring the unaccusative/unergative distinction in L2 English verbs by Japanese-speaking learners.

7.2.1 Implications for Language Learners

A number of studies have reported that "passive" unaccusatives are produced even by advanced learners of English. In fact, it has been argued that L2 learners go through three stages of development (i.e., U-shaped behavior) when they acquire unaccusative verbs (Kellerman 1983; Oshita 1997). According to this model, L2 learners initially do not differentiate unaccusatives from unergatives, projecting the single arguments of both types of intransitive verbs in subject position. The learners at the initial stage thus generate superficially correct surface syntactic structures with unaccusative verbs. This incorrect linking rule is replaced by the target rule when they proceed to the second stage. Oshita argues that it is precisely at this stage when learners start to produce incorrect "passive" unaccusatives. That is, learners have correct argument structure for unaccusastive verbs, but they incorrectly apply passive morphology in promoting the argument of the verb from object to subject position. Finally, at the third stage, learners acquire the correct unaccusative construction where the unaccusative argument moves from object to subject position without the use of passive morphology. The present chapter does not intend to examine the validity of this learning model; rather, it aims to examine if there are any significant effects of negative evidence for learners who make "passive" unaccusative errors to expunge such incorrect structures from their interlanguage grammar.

More recent studies suggest morphological properties of the L1 influence the acquisition of the intransitive/transitive alternation (Helms-Park 2001; Matsunaga 2005; Montrul 1999, 2000, 2001; Shomura-Isse 2006). For example, when unaccusative verbs alternate in transitivity, there is no morphological marker in English (*the glass* broke vs. *John* broke *the glass*), whereas languages like Japanese and Spanish have morphological markings. Examples in (15) show the intransitive and transitive sentences with verb *break* in Japanese.

15. a. Gulasu-ga war-e-ta.
    Glass-nom break-intransitive marker-past
    "The glass broke."
    b. John-ga gulasu-o wa(r)-ta.
    John-nom glass-acc break-past
    "John broke the glass."

Montrul (2000) argues that the problems with argument structure alternations are due to difficulty in mapping argument structure as well as to the morphological realization of argument structure in the L1 and the L2 (cf. Whong-Barr 2005, 2006).

Given these findings from previous L2 studies, the following implications for English language teaching are considered. First, if students were taught a three-way grouping of verbs (i.e., transitive, unergative, and unaccusative) instead of the more traditional two-way grouping (i.e., transitive and intransitive), would this be an easy and effective way of teaching verbs in English? Noticing the different semantic roles of the subject that each verb type bears may lead learners to acquire the correct argument structure of verbs. This would mean that learners would need to be taught that the subjects of transitive and unergative verbs bear Agent roles, while the subjects of an unaccusative verb and the objects of a transitive verb bear Theme roles. Second, it is important for language teachers to understand that learners are more likely to have problems with unaccusative than with unergative verbs. It may be necessary for the properties associated with unaccusative verbs be taught; that is, unaccusative subjects behave like transitive objects. For example, providing positive evidence with resultatives and pseudopassives in L2 English may help advanced learners, as the relevant distinction shows up differently in terms of these constructions. As we have discussed in Section 7.1.1, resultative phrases are compatible with unaccusative verbs, and pseudopassives are allowed with unergative verbs. Third, the fact that no morphology is associated with unaccusativity in English may cause prolonged difficulty.

With these implications in mind, the question arises whether the ungrammaticality of unaccusative passives should be taught explicitly, in comparison with regular passive formation. In the next section, we explore the effect of negative evidence, by considering an experimental study which taught learners that unaccusative passives are ungrammatical (Hirakawa 2005). If it turns out that learners actually benefit from receiving explicit instruction on ill-formed passive unaccusatives (i.e., direct negative evidence), then it can be argued that "learned" knowledge can become "acquired" knowledge for these learners.

7.2.2 The Effects of Negative Evidence in the Classroom

Previous findings have revealed that L2 learners of English fail to reject overpassivization errors with unaccusative verbs. This suggests that the L2 input learners of English receive during the course of acquisition may not be enough for the learners to come to know the ungrammaticality of the ill-formed construction. This leads to the question of whether explicit instruction could lead to this knowledge. To my knowledge, no previous research has investigated the effects of negative evidence on the acquisition of correct unaccusative verbs. Therefore, an experiment was designed and administered to examine the following research question.

> Is "instruction" effective for learners who make overpassivization errors with unaccusative verbs? More specifically, does explicit negative evidence (i.e., teaching the ungrammaticality of passive unaccusatives) make learners reject the errors?

The experiment, including explicit teaching, that "passive" unaccusatives are ungrammatical was conducted at a university in Japan. Teaching lasted for 4 weeks during the regular English class time, and each teaching session consisted of about 30 min per week (15minutes each in two classes) including a number of exercises with unaccusative, unergative, and transitive verbs.

7.2.2.1 Subjects

Three groups of subjects, as shown in (16), participated in the experiment:

16. a. Thirteen Japanese learners (experimental (=instruction) group, with 4-week instruction about unaccusative verbs)
    b. Fourteen Japanese learners (control (=non-instruction) group, regular English lessons only and **no** instruction about unaccusative verbs)
    c. Twelve native speakers of English

Both groups of learners were 1st-year students at a university located in Saitama, Japan.[5] They took a grammaticality judgment task twice (i.e., pretest and posttest) 5 weeks apart. The experimental group (16a) received 4 weeks of instruction on unaccusative verbs between the tests (i.e., learners were explicitly taught ungrammaticality of "passive" unaccusatives (with alternating and non-alternating verbs) and exposed to correct intransitive constructions); no special instruction on unaccusatives was given to the control group (16b), and the learners in this group had regular English lessons only. Native English speakers were mostly students at the same university as the learners. They took the same test, but only once.

7.2.2.2 Tasks and Materials

A scaled grammaticality judgment task (−2 "completely impossible," −1 "slightly impossible," +1 "slightly possible," +2 "completely possible," and "don't know") was employed for the experiment. The task included five verb categories in two sentence structures (intransitive and passive) in two tenses (present and past). Passives with transitive verbs were also included as a syntax test to check whether learners know the passive construction (type 6). There were two versions of the test and one of them was randomly assigned to the learners at each testing, in order to avoid any ordering effects of the test sentences.

Tables 7.1 and 7.2 show the verbs and sentence types used in the experiment. Verbs in types 1 to 4 were chosen along the Auxiliary Selection Hierarchy (Sorace 2000)

[5]Three English classes (reading, writing, and conversation, each class met for 1.5 hours per week; 4.5 hours in total per week) were required for the 1st-year students at this university. The testing and teaching sessions were administered in two of the three (i.e., reading and writing) English classes.

Table 7.1 Verbs used in the study (cf. Sorace 2000)

Type 1	+Telic unaccusative	Arrive, (dis)appear, happen/occur
Type 2	–Telic unaccusative	Survive, stay, last
Type 3	–Control unergative	Cough, sneeze, shine
Type 4	+Control unergative	Play, run, walk
Type 5	Alternating verb	Melt, increase, dry
Type 6	Transitive	Read, build, cut, see, hit/attack

Table 7.2 Sentence types included in the study

Sentence type	Sentence structure	Tense	Example
A	S-V	Present	Trains arrive on time.
B	*S-be + Ved	Present	*Trains are arrived on time.
C	S-V	Past	The plane arrived very late.
D	*S-be + Ved	Past	*The plane was arrived late.

shown in (12) above. We also included alternating unaccusative verbs (type 5) and (non-alternating) transitive verbs (type 6).

It should be noted that sentence types B and D (passive structures in present and past) are ungrammatical for types 1–4 verbs. For type 5 with alternating verbs, although the test sentences were devised to provide a context where the intransitive construction rather than the passive construction would be preferred, the passive structures (sentence types B and D) cannot be completely rejected as passives can be formed based on the alternating verbs.

Examples of the grammatical and ungrammatical test sentences are given in (17) and (18), respectively. Every test item consisted of two related sentences, one context and one test sentence, as examples in (17) and (18) show. In the case of the Japanese learner groups, the first sentence, describing the situation, was given in Japanese in order to ensure they would understand the context correctly, followed by the sentence to be judged in English.[6]

17. a. Traffic is heavy at this crossing.
    A big accident happened last night.
    b. John went to meet his friend at the airport.
    The plane arrived very late.

18. a. Traffic is heavy at this crossing.
    *A big accident was happened last night.
    b. John went to meet his friend at the airport.
    *The plane was arrived very late.

[6]Presenting contexts in learners' L1 for the test sentences to be judged in the target language is not uncommon in L2 research in the generative framework (e.g., Dekydtspotter 2001; Dekydtspotter and Sprouse 2001; Dekydtspotter and Hathorn 2005). This method is adopted in order to ensure that L2 learners will fully understand the context, especially when the learners are at low levels of proficiency and when the study examines their interpretations so that understanding the situation becomes crucial.

7.2.2.3 Results

The judgment task included ten regular passive sentences with transitive verbs (type 6) to ensure that the learners had acquired the passive construction. All learners showed knowledge of the correct passive construction, accepting six or more out of ten sentences; thus, all the subjects were retained for the analyses. We will focus on the results of verb types 1–5 below.

Figures 7.1 and 7.2 show the overall results of the first test (i.e., test 1, a pretest) on the experimental learner group and the native English speaker group, respectively, in terms of mean scores in each sentence structure in each verb type. +2 represents the maximum score accepting the sentence, whereas −2 represents the maximum score rejecting the sentence.

Overall Results: Japanese Learners vs. Native English Speakers

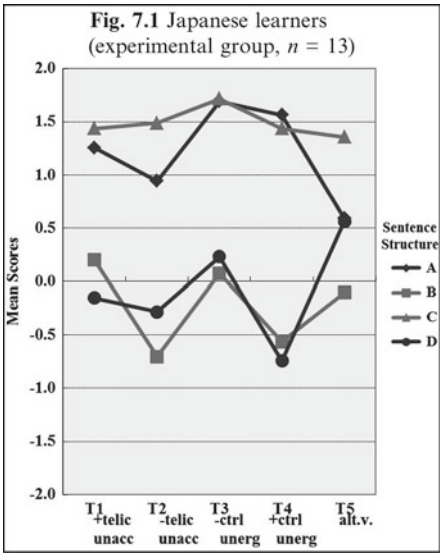


Fig. 7.1 Japanese learners (experimental group, n = 13)

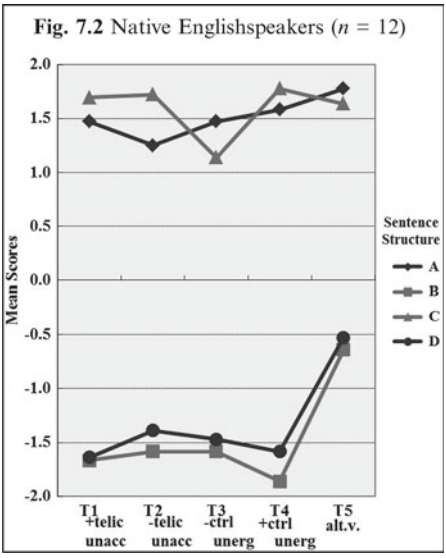


Fig. 7.2 Native Englishspeakers (n = 12)

As shown in Figs. 7.1 and 7.2, the experimental group of learners generally knew the grammaticality of the well-formed sentences, accepting the sentences, but their knowledge of the ungrammaticality of the ill-formed sentences appears not very accurate as their rejection was not as strong as that of native English speakers, especially on types 1B, 1D, 3B, and 3D. The results suggest that, as expected, without yet having had any instruction, the experimental group of learners fail to reject the ungrammatical sentences, especially with + telic unaccusatives and –control unergatives. Native English speakers in general responded as expected, except on types 5B and 5D, that is, short passives based on alternating verbs, where their rejection was not as strong as the other ungrammatical ones. As we have discussed above, the form is not ill formed, thus this weak rejection by native speakers may reflect this point.

Turning to the results of the experimental vs. control groups of learners, it should be noted that at the pretest stage, there were no statistically significant differences on any sentence type between the experimental (instruction) group and control (non-instruction) group (see the results below). Thus, I claim that the two learner groups were comparable with respect to their knowledge of the verb types that were tested. The figures below show the results of test 1 (i.e., pretest) and test 2 (posttest) of the two groups in each sentence type.

To begin with, Figs. 7.3 and 7.4 show mean scores of type 1 (+telic unaccusatives) sentences for the experimental group and the control group, respectively.

Japanese Learners: Experimental vs. Control Groups,
Type 1: +Telic Unaccusative

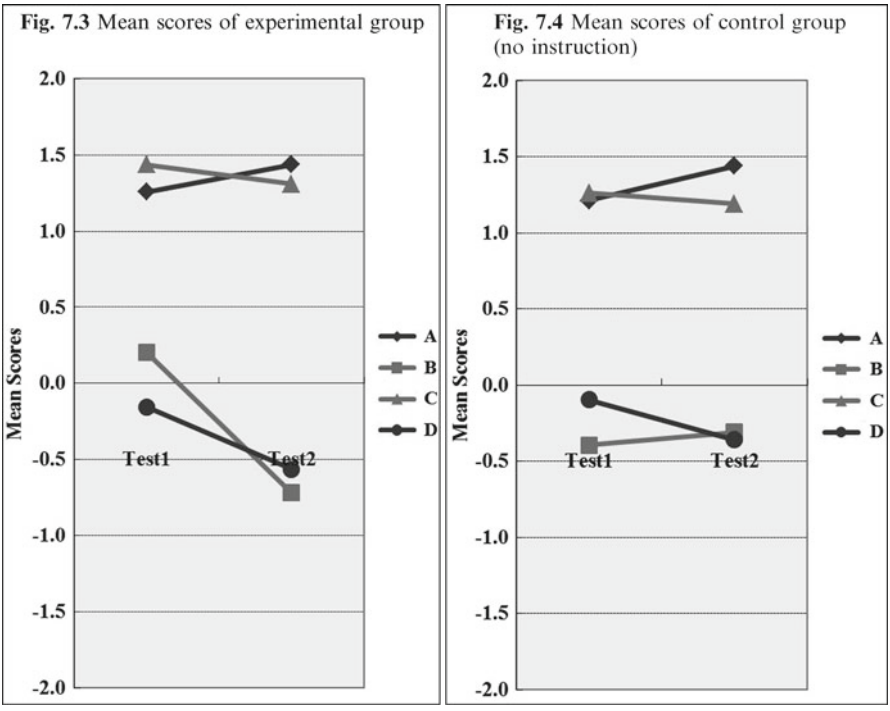


Fig. 7.3 Mean scores of experimental group

Fig. 7.4 Mean scores of control group (no instruction)

As mentioned, there were no significant differences between the two groups on type 1 (+telic unaccusative verbs) in test 1, the pretest (A, $t(25) = 0.15$, ns (nonsignificant); B, $t(25) = 1.44$, ns; C, $t(25) = 0.64$, ns; D, $t(25) = -0.15$, ns). All learners showed knowledge of the correct passive construction, but their rejection of Structures B and D was not very strong, with means falling around zero. For the experimental group, there were significant differences on Structure B after the instruction ($t(12) = 3.91$, $p < 0.01$). Their rejection of the incorrect short passive became stronger with a mean of 0.21 on test 1 and −0.72 on test 2; the same tendency was

observed on Structure D, with a mean of −0.15 on test 1 and −0.56 on test 2. These results suggest effects of teaching on this sentence type. Regarding the control (no instruction) group, no significant differences were found between the results of the pre- and posttests.

Figures 7.5 and 7.6 show mean scores of type 2 (−telic unaccusatives) sentences for the experimental group and the control group, respectively.

Type 2: –Telic Unaccusative

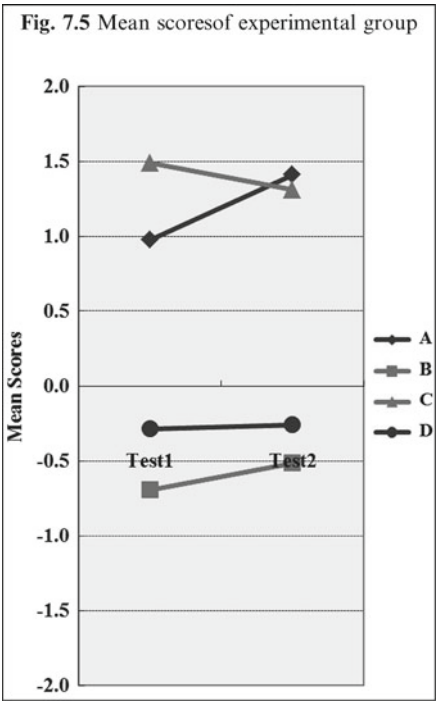


Fig. 7.5 Mean scoresof experimental group

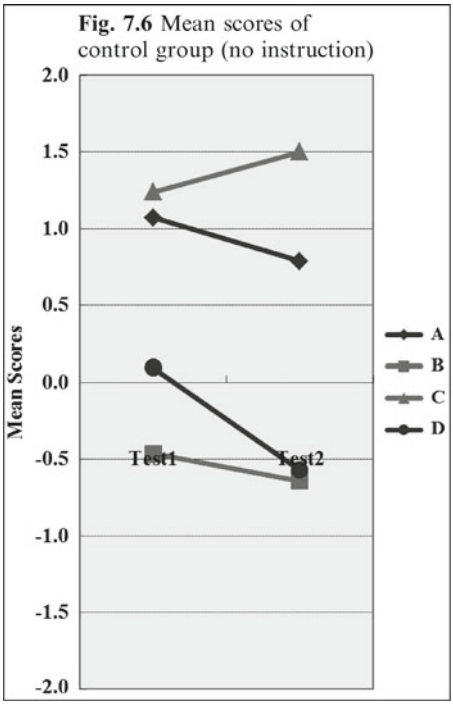


Fig. 7.6 Mean scores of control group (no instruction)

Again, there were no significant differences between the two groups on any type of these sentences at test 1 (A, $t(25) = -0.27$, ns; B, $t(25) = -0.48$, ns; C, $t(25) = 0.76$, ns; D, $t(25) = 0.72$, ns). No significant difference was found in the results of the experimental group between the two tests, whereas a significant difference was found on Structure D for the control group ($t(13) = 3.18$, $p < 0.01$). The fact that significant effects were found for the no instruction group was unexpected. It can be argued that taking the same task twice had some effects on raising the learners' awareness of the ungrammaticality, but this is unlikely as it was not always the case with other constructions. The mean of the control group on Structure D was positive (+0.1) on test 1 and became negative (−0.6) on test 2; the mean of the experimental group on Structure B was negative but close to zero and didn't change after instruction, staying around −0.27.

Turning to type 3 (−control unergatives), Figs. 7.7 and 7.8 show the mean scores of type 3 of the experimental group and the control group, respectively.

Type 3: –Control Unergative

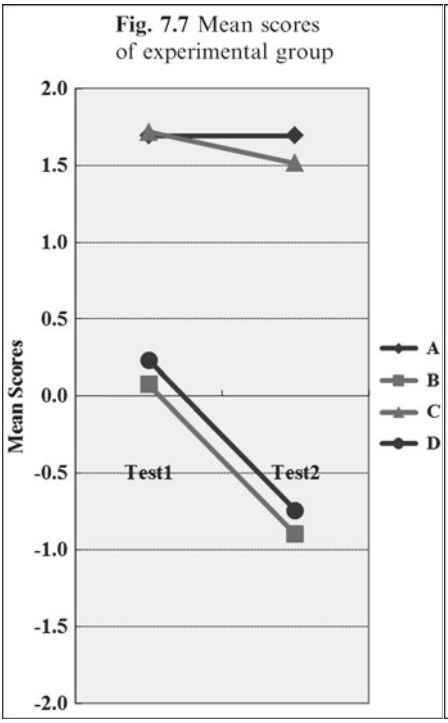


Fig. 7.7 Mean scores of experimental group

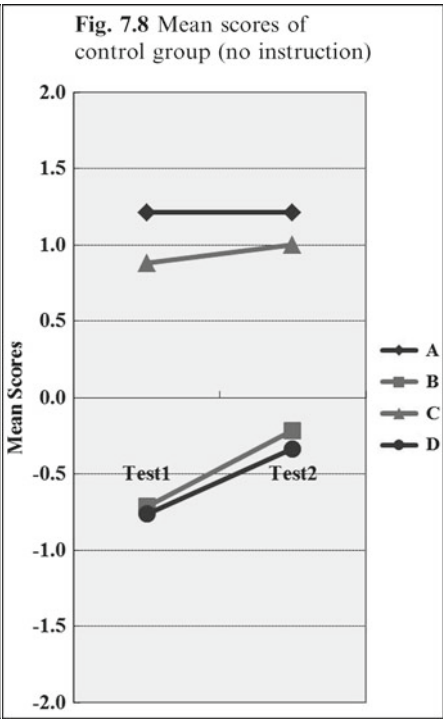


Fig. 7.8 Mean scores of control group (no instruction)

The two groups again showed no difference in their responses on test 1 (A, $t(25)=2.01$, ns; B, $t(25)=2.06$, ns; C, $t(25)=2.73$, ns, D, $t(25)=2.90$, ns). As Fig. 7.7 clearly shows, there were significant differences between the two tests on the two ungrammatical sentence structures, Structures B and D, for the experimental group (B, $t(12)=2.80$, $p=0.016$; D, $t(12)=3.87$, $p<0.01$), suggesting positive effects of teaching, with negative evidence having a clear impact on their knowledge of these structures. In contrast, no significant differences were found between the two tests on any of the sentence structures for the control group. Note, however, that even though there is no statistical difference, the learners in the control group appear to be more accurate than the learners in the experimental group on the incorrect structures (Structures B and D) on test 1, with their means falling on the negative side.

Figures 7.9 and 7.10 show mean scores of type 4 (+control unergative) sentences for the experimental group and the control group, respectively. Again, on test 1, the two groups behaved similarly, as there were no differences on any type (A, $t(25)=1.01$, ns; B, $t(25)=0.52$, ns; C, $t(25)=-0.05$, ns; D, $t(25)=0.69$, ns). Turning to the question of progress across the two tests, no significant differences were found for either group on any sentence structure.

Type 4: +Control Unergative

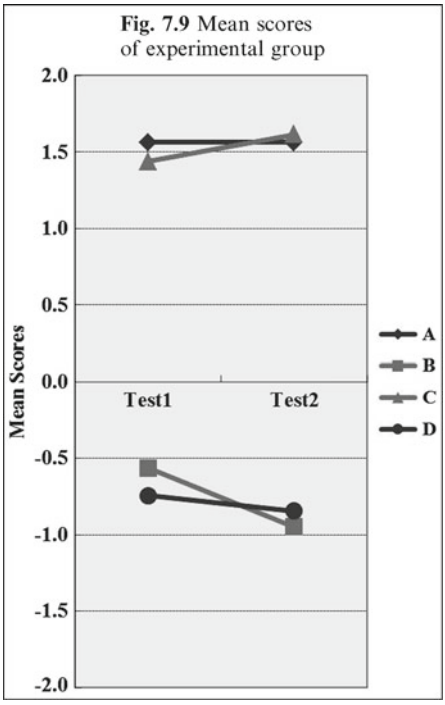


Fig. 7.9 Mean scores of experimental group

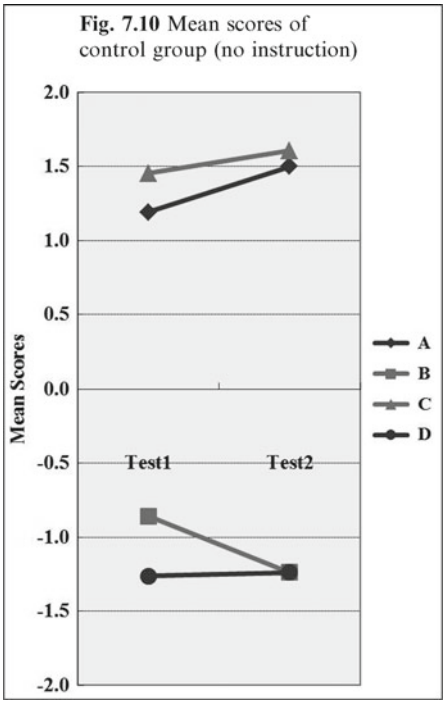


Fig. 7.10 Mean scores of control group (no instruction)

Finally, Figs. 7.11 and 7.12 show the mean scores of type 5 (alternating verbs) for the experimental group and the control group, respectively. Learners were most inaccurate on sentence type 5D among all the sentence types, with both groups accepting 5D (the means of the both groups were over +0.5). The two groups performed much better in test 2, rejecting the inappropriate 5D, but differences of the means between the two tests were in fact found to be significant for the control group only ($t(13) = 2.54$, $p < 0.05$). In test 2, the means of the two groups fell from +0.5 to −0.5, which is around the mean of the native speaker group (cf. Fig. 7.2). It should be noted that, as we have discussed above, the form cannot be completely rejected and that this is reflected by weak rejection of 5B and 5D by native speakers. These results suggest that even the learners in the no instruction group made some improvement on 5D, the short passive form with alternating intransitives in past tense. Recall that on type 2 sentences (−telic unaccusative), the control group made similar progress without any specific teaching on the structure. These results together suggest that the control group was in fact developing in terms of English proficiency, benefiting from regular classroom input or instruction over the 5-week time.

Type 5: Alternating Verb

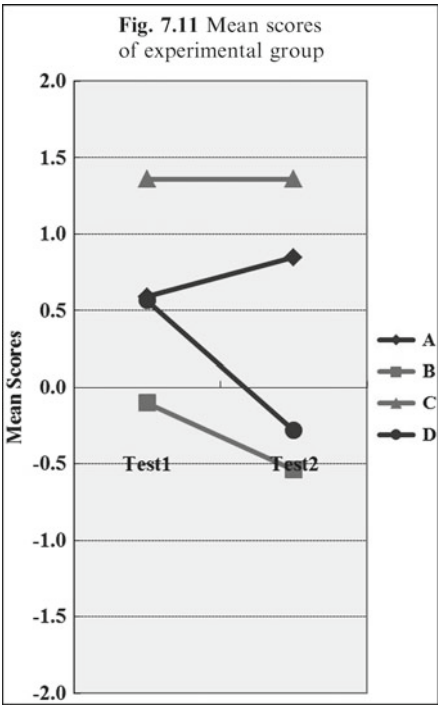


Fig. 7.11 Mean scores of experimental group

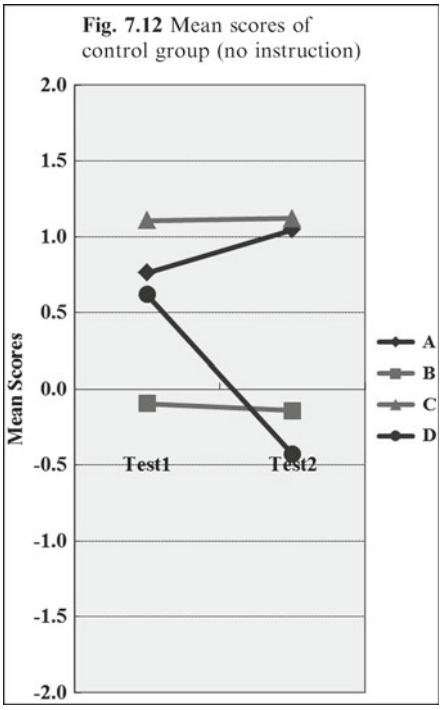


Fig. 7.12 Mean scores of control group (no instruction)

Thus, the results of the pre- and posttests appear to suggest that there is a degree to which learners benefit from receiving negative evidence in the classroom. We will explore this further in the next section.

7.2.2.4 Summary of the Results and Discussion

First, to summarize the results of test 1, Japanese-speaking learners of English in general accepted grammatical sentences, but they often made errors, failing to reject ungrammatical sentences. In particular, the learners had difficulty detecting the ungrammaticality of incorrect passive structures with +/− telic unaccusative verbs and –control unergative verbs. Regarding the results of tests 1 and 2, learners who received instruction appeared to have improved their knowledge on three of the ungrammatical passive structures: type 1 (+telic unaccusative, 1B) and type 3 (−control unergative, 3B and 3D). Learners in the no instruction group also showed some improvement on two structures: type 2 (−telic unaccusative, 2D) and type 5 (alternating intransitive, 5D), suggesting general development in English proficiency.

The effect of teaching as well as the general development observed among the learners were further confirmed by the subsequent analyses on individual scores: That is, they revealed that even though there were no learners in test 1 who made

correct judgment across all test sentence types consistently,[7] there were three (out of 13) in the teaching group and two (out of 14) in the no instruction group who responded correctly to all five sentence types on test 2.

It should be noted that Yusa (2003) has claimed that Japanese-speaking learners of English were sensitive to the universal hierarchy of unaccusativity (the Auxiliary Selection Hierarchy (ASH), Sorace 2000). The classification of verb types in Table 7.1 was based on the universal hierarchy of Sorace (2000). For Yusa's subjects, it was reported that learners made more "passive" errors with the verbs situated higher than those placed lower on the hierarchy. The learners of the present study partially observed effects of the hierarchy, as learners were less accurate on +telic unaccusativity (placed at the top of the hierarchy). However, the learners were more accurate on –telic unaccusatives than on –control unergatives, which is in reverse order to what is expected in terms of the ASH. The reason for this may be found in the analysis of the different verb types. According to the ASH, verbs such as *shine*, *cough,* and *sneeze* are considered –control unergatives; however, these verbs, especially verbs of emission such as *shine*, can also be classified as unaccusatives depending on the analysis. As the learners in the present study had difficulty with +telic unaccusatives and –control unergatives, these learners may have grouped –control unergative verbs as unaccusatives and treated them alike.

The results obtained here partly suggest that teaching the ungrammaticality of "passive" intransitives (i.e., negative evidence) has some positive effects on L2 knowledge of English. It was not found that the instruction was effective for all the structures or all verb types examined in the present study. It may be argued that effects of instruction may vary depending on the grammatical properties. In fact, there is a recent study which reports that at least for one syntactic property of English, learners can in fact attain knowledge which goes beyond the input that they had received in the instruction (Yusa et al. 2011).

Even though we carefully selected the verbs and created a variety of materials for teaching the ungrammaticality of overpassivization with intransitive verbs, we must admit that we were unable to keep the number of verbs used in the materials equals across the six verb types tested. Thus, the actual number of sentences with each verb type the experimental group encountered in the 4-week teaching intervention may have varied across different verb categories. This points to a common difficulty that arises in classroom research: being able to adequately control for the many complex variables at play.

It can be claimed that even though the amount of instruction learners received in the present study may not have been sufficient for all the learners to attain knowledge that enabled them to correctly reject the ungrammatical passives with all types of intransitive verbs, there were still some positive effects of teaching in order to overcome overpassivization errors. Individual analyses in fact revealed there were a few learners who appeared to have acquired the unaccusative/unergative distinction

[7]Consistency was defined as giving the correct responses to 10 or more of the 12 test sentences on each sentence type (Types 1 to 5).

and obtained knowledge of the ungrammaticality of passive intransitive verbs. We conclude with some points needing further research. There is the question of whether instruction has any long-term effects on L2 knowledge. Additionally, there is the need to identify the quantity and quality of negative evidence which is sufficient/crucial for learners to develop knowledge of the ungrammaticality of "passive" unaccusatives in English.

Acknowledgments I am most grateful to the editors of this volume, in particular Melinda Whong, for her insightful comments and suggestions on earlier drafts of this chapter. I also benefited from the comments of an anonymous reviewer. Special thanks to all the participants in the experimental study and to Yuri Fujisaki for her help with statistical analyses. This research was in part supported by a grant from the Ministry of Education, Culture, Sports, Science and Technology (No. 22320109), for which I am grateful.

References

Balcom, P. 1997. Why is this happened? Passive morphology and unaccusativity. *Second Language Research* 13: 1–19.

Burzio, L. 1986. *Italian syntax: A government-binding approach*. Dordrecht: Reidel.

Chiba, S. 1998. Hitaikaku-kobun no dai-ichi dai-ni gengo no kakutoku ('Unaccusative construction in first and second language acquisition'). In *Report (2). Researching and verifying an advanced theory of human language: Explanation of the human faculty for constructing and computing sentences on the basis of lexical conceptual features*, ed. K. Inoue, 173–208. Chiba: Kanda University of International Studies.

Dekydtspotter, L. 2001. The universal parser and interlanguage: Domain-specific mental organization in the comprehension of *combine* interrogatives in English-French interlanguage. *Second Language Research* 17: 91–143.

Dekydtspotter, L., and J. Hathorn. 2005. Quelque chose … de remarquable in English-French acquisition: Mandatory, informationally encapsulated computations in second language interpretations. *Second Language Research* 25: 291–323.

Dekydspotter, L., and R. Sprouse. 2001. Mental design and (second) language epistemology: Adjectival restrictions of *wh*-quantifiers and tense in English-French interlanguage. *Second Language Research* 17: 1–35.

Helms-Park, R. 2001. Evidence of lexical transfer in learner syntax: The acquisition of English causatives by speakers of Hindi-Urdu and Vietnamese. *Studies in Second Language Acquisition* 23(1): 71–102.

Hirakawa, M. 1995. L2 acquisition of English unaccusative constructions. In *Proceedings of the 19th Boston University conference of language development*, ed. D. MacLaughlin and S. McEwen, 291–302. Sommerville: Cascadilla Press.

Hirakawa, M. 2003a. *Unaccusativity in second language Japanese and English*. Tokyo: Hituzi Syobo Publishing.

Hirakawa, M. 2003b. Unaccusatives versus passives in L2 English. In *Generative approaches to the acquisition of English by native speakers of Japanese*, ed. S. Wakabayashi, 41–78. Berlin: Mouton de Gruyter.

Hirakawa, M. 2005. *Effects of instruction on the L2 acquisition of English unaccusative verbs*. Poster presented at J-SLA annual conference, Kwansei Gakuin University.

Hirakawa, M. 2006. 'Passive' unaccusative errors in L2 English revisited. In *Inquiries in linguistic development*, ed. R. Slabakova, S.A. Montrul, and P. Prevost, 17–39. Amsterdam: John Benjamins.

Hubbard, P.L. 1994. Non-transformational theories of grammar: Implications for language teaching. In *Perspectives on pedagogical grammar*, ed. T. Odlin, 49–71. Cambridge: Cambridge University Press.

Kellerman, E. 1978. Giving learners a break: Native language intuitions as a source of predictions about transferability. *Working Papers on Bilingualism* 15: 59–92.

Kellerman, E. 1983. Now you see it, now you don't. In *Language transfer in language learning*, ed. S. Gass and L. Selinker, 112–134. Rowley: Newbury House.

Levin, B., and M. Rappaport Hovav. 1995. *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: The MIT Press.

Levin, B., and M. Rappaport Hovav. 2005. *Argument realization*. Cambridge: Cambridge University Press.

Matsunaga, K. 2005. Overgeneralization in second language acquisition of transitivity alternations. *Second Language* 4: 75–110.

Montrul, S. 1997. *Transitivity alternations in second language acquisition: A crosslinguistic study of English, Turkish and Spanish.* Ph.D. dissertation. McGill University.

Montrul, S. 1999. Causative errors with unaccusative verbs in L2 Spanish. *Second Language Research* 15: 191–219.

Montrul, S. 2000. Transitivity alternations in L2 acquisition. *Studies in Second Language Acquisition* 22: 229–273.

Montrul, S. 2001. First-language-constrained variability in the second-language acquisition of argument-structure-changing morphology with causative verbs. *Second Language Research* 17: 144–194.

Oshita, H. 1997. *"The Unaccusative Trap": L2 acquisition of English intransitive verbs*. Unpublished doctoral dissertation, University of Southern California.

Oshita, H. 2000. What is happened may not be what appears to be happening: A corpus study of 'passive' unaccusatives in L2 English. *Second Language Research* 16: 293–324.

Perlmutter, D., and P. Postal. 1984. The 1-advancement exclusiveness law. In *Studies in relational grammar 2*, ed. D. Perlmutter and C. Rosen, 81–125. Chicago: University of Chicago Press.

Rutherford, W. 1987. *Second language grammar: Learning and teaching*. London: Longman.

Shomura, Y. 1996. Perspectives on pedagogic grammar in English language teaching: A study of the acquisition of ergatives by Japanese learners. In *Annual review of English learning and teaching*, 17–35. The Japan Association of College English Teachers, Kyusyu Okinawa Chapter, Japan.

Shomura, Y. 2002. *The lexicon-syntax interface in second language acquisition: Evidence from L2 Japanese*. Ph.D. dissertation. Edinburgh University.

Shomura-Isse, Y. 2006. The effects of zero/overt morphology in L2 acquisition. *Studies in Language Sciences* 5: 237–258.

Slabakova, R. 2001. *Telicity in the second language*. Amsterdam/Philadelphia: John Benjamins.

Sorace, A. 1995. Acquiring linking rules and argument structures in a second language: The unaccusative/unergative distinction. In *The current state of interlanguage: Studies in honor of William E. Rutherford*, ed. L. Eubank, L. Selinker, and M. Sharwood-Smith, 153–175. Amsterdam: John Benjamins.

Sorace, A. 2000. Gradients in auxiliary selection with intransitive verbs. *Language* 76: 859–890.

Sorace, A., and Y. Shomura. 2001. Lexical constraints on the acquisition of split intransitivity: Evidence from L2 Japanese. *Studies in Second Language Acquisition* 23: 247–278.

Whong-Barr, M. 2005. Transfer of argument structure and morphology. In *Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference (GASLA 2004)*, ed. L. Dekydspotter, R.A. Sprouse, and A. Liljestrand, 269–282. Somerville: Cascadilla Press.

Whong-Barr, M. 2006. What transfers? In *Paths of development in L1 and L2 acquisition. In honor of Bonnie Schwartz*, ed. S. Unsworth, T. Parodi, A. Sorace, and M. Young-Scholten, 187–199. Amsterdam: John Benjamins.

Yip, V. 1995. *Interlanguage and learnability: From Chinese to English*. Amsterdam: John Benjamins.

Yusa, N. 2003. 'Passive' unaccusatives in L2 acquisition. In *Japanese/Korean Linguistics 11*, ed. P. Clancy, 246–259. Stanford: CLSI.

Yusa, N., M. Koizumi, J. Kim, N. Kimura, S. Uchida, S. Yokoyama, N. Miura, S. Uchida, S. Yokoyama, N. Miura, R. Kawashima, and H. Hagiwara. 2011. Second-language instinct and instruction effects: Nature and nurture in second-language acquisition. *Journal of Cognitive Neuroscience* 23: 2716–2730.

Zobl, H. 1989. Canonical typological structures and ergativity in English L2 acquisition. In *Linguistic perspectives on second language acquisition*, ed. S. Gass and J. Schachter, 203–231. New York: Cambridge University Press.

Chapter 8
Quantifiers: Form and Meaning in Second Language Development

Kook-Hee Gil, Heather Marsden, and Melinda Whong

8.1 Introduction

The concepts of form, in the sense of linguistic structure, and meaning are central to both language teaching research and generative linguistic enquiry. In language teaching research, the issue concerns whether to highlight form or meaning in the classroom. This debate has a long history (Musumeci 1997) and in recent research has found expression in the focus on form debate as best articulated by Long (1991; see also Doughty 2001). Briefly, *focus on form*[1] involves explicit teaching of linguistic structures and contrasts with *focus on meaning*, in which language students are exposed to target forms in the classroom without any discussion of the linguistic structures themselves. In generative linguistics since the inception of the field (Chomsky 1965), form has been assumed to be at the centre of the generative

[1]For the purposes of this chapter, we will gloss over the form versus forms distinction (see Doughty and Williams 1998), considering both to fall under the focus on form umbrella.

K.-H. Gil (✉)
School of English Literature, Language and Linguistics,
University of Sheffield, Sheffield, UK
e-mail: k.gil@sheffield.ac.uk

H. Marsden
Department of Language and Linguistic Science,
University of York, Heslington, York, UK
e-mail: heather.marsden@york.ac.uk

M. Whong
Department of Linguistics and Phonetics, School of Modern Languages and Cultures,
University of Leeds, Leeds, West Yorkshire, UK
e-mail: m.whong@leeds.ac.uk

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*,
Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_8,

grammar, with meaning being read off the syntactic structure (see Adger and Ramchand 2005 for a recent illustration). Nonetheless, form-meaning mismatches, where the syntactic form does not map to one unambiguous meaning, are plentiful, and one goal of generative linguistic research is to account for such mismatches. The present chapter brings together the pedagogical interest in form versus meaning and findings from generative linguistic research that identify instances of complex form-meaning relationships. We consider form and meaning by looking at quantifiers (such as *some*, *every* and *any*) in second language (L2) acquisition. The meaning that quantifiers bring to a sentence does not always have a one-to-one correspondence with the syntax; and the syntax of quantifiers can also be surprisingly complex (as detailed throughout the chapter). We review existing L2 data, and a pilot study conducted in the classroom, to see whether learners' acquisition of the meaning and form of quantifiers can benefit from the explicit teaching of form, in contrast to exposure to target forms without explicit teaching (i.e. focus on meaning).

While not usually a 'heavyweight' topic in the language classroom like tense or articles, quantifiers have received much attention in theoretical linguistic research due to the considerable variation in the properties of quantifiers crosslinguistically (some of which, we will illustrate in this chapter). For this reason they offer second language acquisition (SLA) research an opportunity to explore core questions of native language (L1) transfer. They also embody a 'poverty of the stimulus' situation for some L2 speakers (depending on the L1) because neither naturalistic exposure to the target language nor classroom instruction provides direct evidence for all of the properties of quantifiers. Research into L2 poverty of the stimulus phenomena asks whether L2 learners have access to the same innate language acquisition mechanism that is hypothesised in L1 acquisition, namely, Universal Grammar (UG) (White 2003). The logic is that if L2 learners can acquire the L2 phenomenon despite poverty of the stimulus (i.e. the absence of direct evidence), then this would constitute evidence that their L2 development is constrained by UG in the same way as L1 development. If this is the case for quantifiers, then we might conclude that there is no need to focus on form in the classroom, but instead support a focus on meaning approach.

The existing L2 acquisition research on quantifiers falls into two main categories: studies that investigate knowledge of the interpretation, or meaning, of quantifiers and studies that investigate knowledge of distribution, that is, form. In Sections 8.2 and 8.3, we outline L2 research on quantifiers in terms of interpretation and distribution, respectively. The overall conclusion is that both meaning and form can be acquired, but in the case of quantifiers, not readily. This leads to the question of whether explicit teaching can lead to L2 development for learners not yet advanced enough to acquire quantifiers via input alone. Section 8.4 reports on a pilot study, using it as a basis to discuss the implications of generative SLA research for language teaching. We conclude with a call for more collaborative research between SLA and language pedagogy.

8.2 Quantifiers: Acquisition of Meaning

This section outlines the findings of studies by Dekydtspotter et al. (2001), Marsden (2008) and Marsden (2009), which investigate L2 knowledge of subtle meaning changes that occur when one quantifier interacts with another. The three studies share a common research question, namely, when the target language allows Interpretation A for a given sentence type, but the speakers' first language (L1) additionally allows Interpretation B, can learners acquire *the absence* of Interpretation B in the target language? In all three studies, acquisition of the more restrictive interpretation possibilities in the target language is demonstrated to be a poverty of the stimulus problem because the 'stimulus' (i.e. the sources available to the learner) does not provide direct evidence for the absence of Interpretation B. This is because the sentence types investigated in the three studies are rarely touched upon in classroom instruction, and even when these forms do occur, whether in the classroom or naturalistically, they (obviously) occur only in contexts that require Interpretation A. Such occurrences cannot serve as evidence that Interpretation B should be ruled out, given that the L1 would allow both A and B.

8.2.1 Dekydtspotter et al. (2001)

The focus of the study by Dekydtspotter et al. (2001) is an interpretation difference between two word order variants of French *combien* 'how many' questions. The word order variants are shown in (1)–(2). (1) illustrates the 'continuous *combien*' question form, in which *combien* is followed immediately by its nominal restriction *de livres* 'of books'. (2) illustrates the 'discontinuous *combien*' form, in which *de livres* occurs in object position, with *combien* alone at the beginning of the question, without the object phrase.

1. **Combien de livres** est-ce que les étudiants achètent tous?
   how many of books do the students buy all
   'How many books are the students all buying?'
2. **Combien** est-ce que les étudiants achètent tous **de livres**?
   how many do the students buy all of books
   'How many books are the students all buying?'

Although the two question forms in French share a single English form, only the continuous *combien* form (1) allows two distinct answers (as the English form does). To illustrate, consider a scenario in which Student A is buying Books X, Y and Z; Student B is buying Books X, Y and W; and Student C is buying Books X, Y and V. The answer to the question in (1) can be either 'three' (i.e. each student buys three books) or 'two' (i.e. there are two books, X and Y, that are common to all

of the students).[2] The discontinuous *combien* question (2) allows only the first interpretation or 'narrow scope' of the object (see footnote 2). The interpretive difference between continuous and discontinuous *combien* questions is argued to arise through the interaction of idiosyncratic syntactic properties of the two forms of the *combien*-de-N unit with universal properties of semantic interpretation (see the original article for full details).

The aim of Dekydtspotter et al.'s study thus is to find out whether English speakers of French know that discontinuous *combien* questions allow only one answer: the narrow-scope interpretation of the object NP. They used a truth value judgement task, with four test types:[3]

3. a. Continuous *combien* question + S>O answer
   b. Continuous *combien* question + O>S answer
   c. Discontinuous *combien* question + S>O answer
   d. *(Discontinuous *combien* question + O>S answer)

Contexts were devised that favoured either a narrow-scope (S>O) interpretation of the object or a wide-scope (O>S) interpretation. These contexts were presented to the participants as stories. At the end of each story, a *combien* question was posed, and an answer provided. The participants had to judge whether or not the answer was true in the context given. When the question was in the discontinuous form and the answer required the object-wide-scope interpretation (i.e. the ungrammatical type (3d)), it was expected that, if the speakers had acquired the relevant properties of these question forms, they would judge the answers false. The test included seven tokens of each of the types in (3).

The key finding was that the intermediate subjects ($n = 71$) tended to reject the discontinuous forms regardless of the answer type. By contrast, the advanced subjects ($n = 32$) differentiated between the two discontinuous forms in a target-like way: they had a statistically significantly higher rate of acceptance of subject-wide answers than object-wide answers. Dekydtspotter et al. thus concluded that, by advanced level, English speakers of French are able to acquire the *absence* of an interpretation, even though this absence is not taught and it is not presented in the input.

[2] The first answer, 'three', arises from an interpretation of the indefinite object *livres* 'books' below the scope of the universal quantifier *tous* 'all' (i.e. 'for every student, how many books is he/she buying?'; narrow scope of the object), while the second answer 'two' arises from an interpretation in which the indefinite object *livres* takes scope above the quantifier *tous* (i.e. 'for how many books is it the case that every student is buying those books?'; wide scope of the object).

[3] The 'greater than' symbol, >, is used to indicate that the element preceding > takes scope over the element following >. 'S' means 'subject' and 'O' means 'object'. Thus 'S>O answer' means 'an answer in which the universally quantified subject is understood to take scope over the indefinite object', in other words, an answer of 'three' to questions (1) and (2).

8.2.2 Marsden (2008)

Marsden (2008) also investigated universal quantifiers in questions but focused on Japanese. The question form investigated is shown in (4).

4. Nani-o daremo-ga katta no?
   what-ACC everyone-NOM bought Q
   'What did everyone buy?'

The question in (4) contains a scrambled wh-object *nani* 'what' and a universally quantified subject *daremo* 'everyone'.[4] The aim of the study was to discover whether L2 speakers of Japanese know that questions of the form given in (4) allow an 'individual answer' along the lines of 'Everyone bought books' (i.e. each person in the set under consideration bought at least one book), but they do not allow a 'pair-list answer', along the lines of 'Jane bought a book and a pen, Sam bought a book and a newspaper, Ellie bought a pen and a notebook…'. We report here on the findings from speakers with either English or Chinese as their L1.[5] English and Chinese questions with a universally quantified subject and a wh-object allow both individual and pair-list answers.[6]

Marsden used a picture-based acceptability judgement task, in which participants were presented with pictures that could support either an individual or a pair-list answer to a question with the form given in (4). Each picture was presented on a screen, with a question like (4) appearing underneath, followed by either an individual answer or a pair-list answer. Participants were asked to judge whether the answer was possible in the context of the picture and the question. The test included five tokens with individual answers and five with pair-list answers. The participants included four L2 Japanese groups, determined on the

[4] 'Scrambling' refers to optional rearrangement of the standard word order into an allowed but non-standard order. The standard word order in Japanese is SOV, and since it is a wh-in situ language, the standard form of a wh-object question is S wh-O V? In (4), the wh-object is scrambled because it has been moved in front of the subject. Marsden (2008) investigated scrambled wh-questions because the non-scrambled counterpart of the specific question type illustrated in (4) is reported to be of dubious grammaticality due to independent properties of the quantifier *daremo* (Hoji 1985; Tomioka 2007, among others).

[5] Marsden (2008) also investigates Korean-speaking learners.

[6] Tomioka (2007) proposes that the source of this variation involves crosslinguistic differences in mechanisms for expressing focus. Briefly, he argues that scrambling has the effect of focusing the scrambled element and that a focused element (here, the wh-object) cannot be interpreted under the scope of a non-focused element. Consequently, the pair-list reading cannot arise, since this reading requires a subject-wide scope interpretation. Notice that, similarly, if *everyone* receives prosodic focus in the English version of the question *What did everyone buy?* the pair-list reading is harder to obtain than with neutral intonation.

basis of their L1 and their L2 Japanese proficiency level: L1 Chinese, intermediate ($n = 10$); L1 Chinese, advanced ($n = 7$); L1 English, intermediate ($n = 21$); and L1 English, advanced ($n = 12$).

The results showed that neither of the intermediate-level L2 groups differentiated between the answer types. They tended to accept both, with acceptance rates of at least 60 % and with less than 8 % differentiation between the two types. On the other hand, the advanced L2 groups were considerably more successful in differentiating the two types, with lower rates of acceptance of the pair-list answers than individual answers (at least 30 % lower). Examination of individual results revealed that around 40 % of the subjects in each advanced group consistently rejected pair-list answers, while in the intermediate groups, fewer than 15 % consistently rejected pair-list answers.

These findings resonate with those of Dekydtspotter et al. They show that the absence of the pair-list interpretation is not easy to acquire in L2 Japanese, but by advanced level, a considerable proportion of speakers are able to acquire it. Most interestingly, they achieve this despite the lack of direct evidence about this absence, in the sources available to the learner.

8.2.3 Marsden (2009)

The final study on interpretation investigated L2 knowledge of the scope interaction of quantifiers in a declarative sentence. Again, the target language was Japanese. The investigation included sentences containing an existentially quantified subject and a universally quantified object, such as (5):[7]

5. Dareka-ga dono hon-mo yonda.
   someone-NOM every book-also read
   'Someone read every book.'

The English equivalent of (5), *Someone read every book*, allows two interpretations: a subject-wide-scope interpretation (6a) and an object-wide-scope interpretation (6b).

6. a. 'One individual read all of the books in the context.'
   b. 'For each book, some person read it (but there may be more than one individual involved).'

However, in Japanese, the object-wide-scope interpretation is absent. Thus, only interpretation (6a) is available for (5).[8]

[7] Marsden (2009) also investigated sentences containing collective universal quantifiers like 'all' as well as scrambled counterparts of (5).

[8] Marsden (2009) argues that this crosslinguistic variation may be a corollary of Japanese universal quantifiers being unspecified for number, whereas *every* in English must be [+singular].

The method was similar to Marsden (2008). English-speaking learners of Japanese (12 advanced, 19 intermediate) judged sentences like (5) in the context of pictures depicting either a subject-wide interpretation of the sentence (e.g. one person reading a pile of books) or an object-wide interpretation (e.g. four people each reading their own book). Participants were asked to rate how well the sentence matched the picture.

The results conform to the pattern of the two previous studies: the advanced speakers showed evidence of target-like rejection of object-wide scope, while the intermediate speakers' responses were more indeterminate. Specifically, half of the advanced speakers consistently rejected the object-wide-scope interpretation of doubly quantified sentences like (5), whereas only a quarter (5 out of 19) of the intermediate speakers did so. Moreover, the intermediate speakers' results were characterised by inconsistency, with eight individuals sometimes accepting and sometimes rejecting object-wide scope, whereas only one individual in the advanced group demonstrated inconsistent responses. In short, at least some of the learners were able to acquire target-like rejection of object-wide scope of a distributive QP, despite poverty of the stimulus.

8.2.4 Summary: Acquisition of Quantifier Meaning

All three of these studies show that acquisition of subtle interpretive phenomena involving quantifiers is by no means easy. Only by advanced level was there evidence of target-like knowledge. However, the fact that target-like behaviour was emerging by advanced level suggests that poverty of the stimulus can be overcome in L2 acquisition and that these subtle aspects of meaning can be acquired in a second language.

The studies presented in the next section investigate form, specifically L2 knowledge of restrictions on the distribution of the existential quantifier *any* in English (Gil and Marsden 2010; Gil et al. 2011) and of the existential use of wh-words in Chinese (Yuan 2010). The studies by Yuan and Gil and Marsden involve more poverty of the stimulus phenomena, whereas the last study, Gil et al., investigates acquisition of a property of *any* for which evidence is available in the input. In order to make sense of the studies, however, we first give details of the key properties of English *any* and Chinese existential wh-words.

8.3 Quantifiers: Acquisition of Form

The general rule for *any,* commonly found in English language textbooks and grammars, is that it can occur following (but not preceding) negation (e.g. (7)) and in questions (8a). However, it can also occur in a restricted set of non-negated contexts (e.g. 8b), but not (8c, d).

7. I didn't see anyone yesterday (cf. *Anyone didn't see me yesterday).
8. a. Did you see anyone yesterday?
   b. If anything goes wrong, call me.
   c. *I've already eaten anything (cf. I've already eaten something).
   d. *Mary is talking to anyone right now (cf. Mary is talking to someone right now).

A broad generalisation that accounts for the ungrammaticality of *any* in (8c–d) is that it only occurs in 'nonveridical' contexts, which means contexts that do not correspond to actual events, such as the negated contexts, interrogatives and conditionals (7–8b).

However, there are some exceptions to this generalisation. First, there are certain 'veridical' contexts (i.e. contexts that *can* be assumed to correspond to actual events) in which *any* is grammatical, such as after so-called downward-entailing adverbs such as *only* (9a) or in the complement clause of a negative factive verb, like *regret* (9b).[9]

9. a. Only Izzy knew anything.
   b. Sam regretted that his boss had told anyone the news.

One account of exceptions like (9a–b) is that *any* is licensed pragmatically in these environments (Giannakidou 2006). Specifically, in (9a–b) a negative inference is generated, and this 'rescues' *any* in the veridical environment.

10. a. Only Izzy knew anything. → No one but Izzy knew anything.
    b. Sam regretted that his boss had told anyone the news. → Sam wished that his boss had not told anyone.

Two more exceptions to the generalisation that *any* is grammatical in nonveridical environments can be seen in (11a–b). Both sentences are nonveridical, yet *any* is ungrammatical. The nonveridicality of (11a) comes from the adverb of uncertainty, *perhaps*, which makes the truth of the assertion unknown and hence nonveridical. In (11b), nonveridicality comes from the matrix verb *guess*, which is a nonfactive verb.[10] The assertion in the complement clause of a nonfactive verb cannot be assumed to correspond to fact.

11. a. *Perhaps Izzy knew anything.
    b. *Sam guessed that his boss had told anyone the news.

All of these examples are considered questions of form because the combination of the quantifier with particular types of verbs leads to more than a problem of meaning: the disallowed forms are ungrammatical in addition to being uninterpretable.

Chinese provides an interesting contrast; existential quantifiers in this language exhibit similarities to and differences from *any*. One of the main ways of expressing

[9] Other downward-entailing adverbs include *hardly and barely*. Other negative factive verbs include *deny*, *be sorry* and *be shocked.*

[10] Other nonfactive verbs include *believe*, *think* and *suppose.*

the sense of 'any' is through words that also function as wh-interrogatives. Thus the word *shenme* in (12) means 'what', but in (13) and (14) it means 'any(thing)'.[11] The particular meaning that emerges is determined by co-occurring morphemes. Thus, in (12), either the wh-question morpheme *ne* or the presence of question intonation determines that *shenme* is interpreted as 'what'. In (13), the *yes-no* particle *ma* determines that *shenme* becomes 'anything'. Similarly in (14), it is co-occurrence with the conditional morpheme *yaoshi* or *ruguo* that yields the existential sense 'any'. Finally, (15) is ungrammatical, because it lacks a quantifying morpheme or question marking; thus, there is nothing to determine the meaning of *shenme* (examples based on Cheng (1994) and Li (1992)).

12. Hufei chi-le shenme (ne)?
    Hufei eat-ASP WHAT WH-Q
    'What did Hufei eat?'
13. Ta mai-le shenme ma?
    he buy-PERF WHAT Y/N-Q
    'Did he buy anything?'
14. Yaoshi/Ruguo shenme ren xihuan ta, …
    If WHAT person like him
    'If anyone likes him…'
15. *Ta zuo shenme.
    he do WHAT
    ('He did something')

Clearly, this morphological property of *shenme* (and other Chinese wh-expressions) differentiates it from English *any*, since wh-interrogatives are expressed by a distinct set of words in English. However, a similarity with *any* is also evident from the Chinese data presented so far. Specifically, Chinese wh-existentials can occur in nonveridical contexts, such as interrogatives (13) and conditionals (14), but they cannot occur in veridical contexts. In fact, Chinese wh-existentials appear to be restricted strictly to nonveridical contexts, without the exceptions that we saw for English *any*. Thus, in contrast to English, they can occur in the complement clause of a nonfactive verb (16) but not in the complement of a negative factive verb (17) (Li 1992).

16. Wo yiwei/renwei/cai/xiwang ni xihuan shenme (dongxi).
    I think/think/guess/hope you like WHAT thing
    'I think/guess/hope that you'll like something/*anything.'
17. *Wo houhui zuo shenme (shiqing).
    I regret do WHAT thing
    'I regret having done something/anything.'

[11] Henceforth, we will use the term 'wh-expression' to refer to the Chinese words that can be used either as interrogatives or as existentials. When referring to the interrogative use, we use the term 'wh-interrogative', and when referring to the existential use, we use the term 'wh-existential'. When glossing wh-expressions, we will use the corresponding English wh-word sense in small caps; the translation will show the actual sense in the context.

While there is a wealth of research that seeks to account for the distribution of *any* and of Chinese wh-existentials (e.g. Cheng 1994; Giannakidou 1997, 1998, 2006; Klima 1964; Li 1992; Lin 1998; Linebarger 1980; Szabolcsi 2004; among others), it is beyond the scope of the present chapter to attempt to outline these accounts. Our chief interest is the L2 acquisition problem posed by these forms for learners of English and Chinese, as explored in the following sections.

8.3.1 Yuan (2010)

Yuan (2010) investigated L2 knowledge of Chinese wh-existentials by native English and Japanese speakers. Japanese is similar to Chinese in that it has existentials that are formed from wh-words. In Japanese, a particle is added to the bare wh-expression to form the existential. Thus, the bare form *nani* in (18) always has the sense of 'what', while *nani* in (19), with the disjunctive suffix *ka*, means 'something/anything'.

18. Nani-o katta no?
    what-ACC buy.PAST Q
    'What did you buy?'
19. Nani-ka-o katta no?
    WHAT-DISJ-ACC buy.PAST Q
    'Did you buy something/anything?'

Wh-existentials in Japanese have an unrestricted distribution. They can occur freely in veridical and nonveridical environments.

Assuming that the L1 grammar influences L2 development, the two sets of learners face different tasks. Japanese-speaking learners of Chinese must come to acquire the restrictions on Chinese wh-existentials. It might be predicted that, influenced by their L1, they would allow Chinese wh-existentials in any environment. Moreover, acquisition of the restrictions on the distribution of Chinese wh-existentials appears to be a poverty of the stimulus problem, since it involves acquiring the *absence* of a possibility that is available in the L1. Not surprisingly, Chinese language textbooks do not explicitly teach the restrictions on the distribution of wh-existentials. Considering the findings of Section 8.2, it might be expected that among the Japanese-speaking participants, only advanced learners, if any, are able to acquire the restricted distribution of Chinese wh-existentials. By contrast, for English speakers, L1 knowledge of the restricted distribution of *any* might facilitate restriction of Chinese wh-existentials. Their main acquisition task is to learn that wh-existentials are permitted in certain environments where *any* is ruled out in English (e.g. following uncertainty adverbs and nonfactive verbs). This is not a poverty of the stimulus problem: it can be acquired through exposure to wh-existentials in these contexts. Thus, in terms of L1 transfer, English speakers may have an advantage over Japanese speakers with regard to acquiring the distribution of Chinese wh-existentials.

Yuan used an acceptability judgement task to test the L2 Chinese of English and Japanese speakers, in five proficiency groups from beginner to advanced. The task included the following grammatical wh-existential sentence types:[12]

20. a. Negation + object wh-existential
    b. Nonfactive verb + wh-existential in complement clause
    c. Conditional clause containing wh-existential
    d. Subject wh-existential + *yes-no* question particle *ma*
    e. Object wh-existential + *yes-no* question particle *ma*

The ungrammatical counterparts of (20a–c) were as follows:[13]

21. a. *Subject wh-existential + negation
    b. *Factive verb + wh-existential in complement clause
    c. *Conditional clause followed up matrix clause containing wh-existential

Participants rated four tokens of each type on a scale of −3 ('completely unacceptable') to +3 ('completely acceptable'). The results for all but the advanced groups of both L1s were characterised by mean ratings of between −1 and +1, showing that in group terms, the pre-advanced speakers were unsure whether any of these sentence types were grammatical or not. However, the picture is different for the advanced groups. On the sentence types containing negation, (non)factive verbs and conditional morphemes, both advanced groups had significantly higher acceptance ratings on the grammatical types than the ungrammatical types. Only on the *yes-no* questions (20d–e) was there a difference between the two advanced groups. The L1-Japanese group accepted both *yes-no* question types (i.e. their behaviour was target-like), whereas the L1-English group rejected them.[14]

These results suggest that, below advanced level, speakers are not aware of the correct use of Chinese wh-existentials. By advanced level, however, they are generally able to differentiate between grammatical and ungrammatical uses. This suggests that the advanced speakers are aware of the dual use of wh-words and of the restricted distribution of wh-existentials. In terms of the concerns of the present chapter, the results show that structural restrictions on quantifiers—in other words, form—can eventually be acquired despite the absence of evidence for this restricted distribution in the input. Thus far, then, acquisition of form, like acquisition of meaning, appears to be possible, if only by advanced level, even in a poverty of the stimulus situation.

[12] Yuan's task included four additional sentences frames not reported here. See Yuan (2010) for details and also Gil and Marsden (2013) for discussion. The results for the five sentence frames that we focus on here are representative of the full set and suffice for the present chapter.

[13] No ungrammatical counterparts for the *yes-no* question frames (20d–e) were included.

[14] Yuan proposes that advanced English speakers' lower accuracy in the *yes-no* questions compared with the Japanese speakers may be due to the fact that Japanese, like Chinese, employs question particles in question formation (e.g. *no* in (18–19)), whereas English does not. Therefore, L1 transfer of question particles may have facilitated accuracy for the Japanese speakers on these items.

8.3.2 Gil and Marsden (2010)

Gil and Marsden (2010) investigate L2 knowledge of English *any*, by Korean-speaking learners. The acquisition task is comparable with the acquisition task faced by the Japanese-speaking learners of Chinese in Yuan (2010). Korean is another language that uses wh-expressions as existential quantifiers. Like Japanese, there are no restrictions on where wh-existentials can occur. Thus, a Korean wh-existential such as *nwu(kwu)* 'someone' is also the translation equivalent of English *anyone* in those contexts where *anyone* is grammatical (22). However, unlike English *anyone*, it can also occur in veridical contexts, such as (23) (where *nwu* cannot be translated as 'anyone').[15]

22. Nwu-ka cha-lul masiko iss-nayo?
    who-NOM tea-ACC drink PROG-Q
    'Is anyone/someone drinking tea?'
23. Nwu-ka cha-lul masiko isseyo.
    who-NOM tea-ACC drink PROG
    'Someone (*anyone) is drinking tea.'

A goal of Gil and Marsden's investigation was to find out whether Korean-speaking learners of English know that *any* has a restricted distribution. The ungrammaticality of *any* in a progressive such as the translation of (23) cannot be acquired by L1 transfer, since Korean wh-existentials are allowed in any environment. Again, as classroom instruction does not cover the restrictions on *any*, nor can restrictions be determined from the input, acquisition of the restricted distribution is a poverty of the stimulus problem for Korean-speaking learners.

The test instrument was a picture-based acceptability judgement task with *anyone* in *yes-no* questions, conditionals and progressives, the latter being ungrammatical. Each test item was viewed on a screen, accompanied by a picture that depicted one person or more doing the activity that was mentioned in the test sentence. Twenty-two upper-intermediate and advanced-level Korean-speaking learners of English rated each sentence in terms of its acceptability.

The results showed that the participants accepted *any* in all three contexts over 75 % of the time. On the progressives, the rate of acceptance was 82.7 %. Thus in general, the participants appeared to be unaware that *any* has a restricted distribution. However, investigation of the response patterns of individual participants revealed that two of the 22 participants consistently rejected the progressive test items. These two individuals appear to have overcome the poverty of the stimulus problem and acquired the relevant restriction on *any* (at least for progressive sentences). Closer inspection revealed that these two individuals had had longer exposure to English than the others: one had entered UK education in her early teens and lived in the UK for 6 years; the other arrived in the UK much later but had lived in

[15]The question in (23) can also have the meaning 'Who is drinking tea?' depending on the intonation (Jun and Oh 1996).

the UK for 10 years. The majority of the participants in the study had had just one year's residence, with some exceptions having 4–5 years' residence. The distinctive performance of the two successful participants thus might be related to their prolonged (and early) exposure to L2 input.

Although only two learners in this study demonstrated knowledge of quantifier distribution, the general pattern is nonetheless similar to that of the Japanese-speaking learners of Chinese in Yuan (2010). In both studies, knowledge of the restricted distribution of existentials was acquired, despite the absence of evidence, by a minority of the participants in the study.

8.3.3 Gil et al. (2011)

The final study in this section investigated L2 knowledge of English *any* by upper-intermediate and advanced-level Chinese-speaking ($n = 11$) and Arabic-speaking learners ($n = 15$). In this case, there was no poverty of the stimulus problem, and the results showed that none of the participants had target-like knowledge of the properties of *any* investigated.

As with the other studies, participants judged the acceptability of sentences containing ungrammatical instances of *any* in nonveridical contexts (e.g. 24b–c) and grammatical instances of *any* in contexts that give rise to negative inference (e.g. 24d–e).

24. a. Progressive, for example, *Anyone is singing.
    b. Episodic, for example, *Anyone sang.
    c. [*Even N… any…*], for example, *Even Sam saw anyone.
    d. [*Only N… any…*], for example, Only Sam saw anyone.
    e. Negative factive, for example, Bill regretted that Sam had seen anyone.

As noted above, Chinese wh-existentials are ungrammatical in veridical contexts equivalent to (24a–c). They are also ungrammatical in those veridical contexts where *any* can be rescued by negative inference, such as (24d–e). Therefore, Chinese-speaking learners of English might be predicted to reject *any* in veridical contexts (24a–c), facilitated by L1 transfer. However, L1 transfer might also mean that they have difficulty accepting *any* when it is grammatical in a veridical environment (24d–e). Arabic also has an existential quantifier *aiya* with a distribution that is largely restricted to nonveridical contexts, but it is reported to be compatible with contexts like (24d–e). Thus, Arabic-speaking learners of English may be facilitated by their L1 in producing target-like judgements of all the sentence types in (24).

The results in fact did not reveal any difference between the two L1 groups in terms of sentence type. Instead, a cross-L1 pattern was found, whereby both sets of participants tended to reject both the ungrammatical and the grammatical sentences containing *any*. Moreover, examination of the responses of individual participants revealed that no individual demonstrated consistent target-like rejection of ungrammatical tokens combined with consistent target-like acceptance of grammatical

tokens. Acquisition of the grammatical uses of *any* where it is licensed by negative inference thus appears to be difficult, regardless of L1. In this case, the difficulty is not due to poverty of the stimulus, because clearly the learners could potentially encounter examples of *any* such as (24d–e) in the input. It is interesting to note that the difficulty in this case relates to pragmatic licensing of a quantifier. The syntax-pragmatics interface has already been identified as an area of potential difficulty in L2 development (e.g. Sorace 2011; Sorace and Filiaci 2006; Tsimpli and Sorace 2006). We will return to this point in Section 8.4.

8.3.4 Summary

As in Section 8.2, a key finding from the studies in the present section is that the properties of quantifiers are not easy to acquire, but that in many cases they can eventually be acquired, even under poverty of the stimulus. Specifically, for the Japanese-speaking learners of Chinese in Yuan (2010) and the Korean-speaking learners of English in Gil and Marsden (2010), acquisition of the restricted distribution of existential quantifiers was identified as a poverty of the stimulus problem because, in the respective L1s, existential quantifiers can occur freely and because the input that the learners encounter does not provide direct information about where existentials are ungrammatical. Nonetheless, in both studies advanced learners (albeit only two, in Gil and Marsden) were able to correctly accept the grammatical forms and correctly reject existentials in veridical contexts. However, a new finding in the present set was that learners were unable to acquire the exceptional licensing of *any* by negative inference.

If the results of Sections 8.2 and 8.3 suggest that both meaning and form can eventually be acquired, we now turn our attention to what this means in terms of language pedagogy. We suspect that many teachers would be dissatisfied by advice to simply wait for the eventuality of acquisition. The obvious question for language teaching is whether L2 development can be 'speeded up' by explicit instruction. We explore this and other implications of research on quantifiers in the next section.

8.4 Implications for the Language Classroom

That the existing studies on the L2 acquisition of quantifiers show eventual acquisition of both meaning and form is perhaps not surprising, given the impossibility of separating meaning and form. A recent proposal by Slabakova (2008) also addresses meaning and form, observing that within L2 knowledge, meaning seems to come 'for free', whereas the properties of one particular type of form—functional items—are hard earned and prone to fossilisation. The complex morphosyntactic properties of functional items like quantifiers are argued to be a 'bottleneck' which holds

learners back from native-like knowledge. However, once this bottleneck is overcome, other phenomena that are regulated by the morphosyntactic properties in question seem to be acquired automatically. The poverty of the stimulus studies reported above are examples of learners acquiring target phenomena for free, in the sense that underlying knowledge seems to have arisen without any kind of specific intervention other than exposure to target language input.

Curiously however, in Gil et al. (2011), we saw failure to acquire a target language phenomenon, even though direct evidence of the particular phenomenon—licensing of *any* by negative inference—is available in the input. As already observed, this particular phenomenon concerns the interface of morphosyntactic (or lexical) knowledge with pragmatics, if we assume (following Giannakidou 2006) that the 'rescuing' of *any* by negative inference is due to inherent lexical properties of *any* that allow the pragmatic context to license it. This means that the task for these learners involves acquisition of a new lexical feature and the interaction of this feature with pragmatics. Another area of difficulty for L2 learners is the syntax-pragmatics interface, providing a potential explanation for this result. However, the phenomenon investigated in Marsden (2008) also involved the syntax-pragmatics interface, with the syntactic operation of scrambling interacting with pragmatic focus, and at least some of the learners in that study successfully acquired the target phenomenon (absence of pair-list readings in L2 Japanese). Thus, it is not the case that all L2 syntax-pragmatics interface phenomena are unacquirable.

Returning to Gil et al. (2011), with both the acquisition of morphosyntactic properties and the acquisition of syntax-pragmatics interface phenomena identified as areas of particular difficulty in L2 acquisition, it is perhaps unsurprising that, of all the quantifier-related phenomena reviewed in this chapter, acquisition of the licensing of *any* by negative inference is the one where no learners were successful. Slabakova suggests that if L2 acquisition of the morphosyntactic properties of functional items is a bottleneck, then a possible implication for language pedagogy could be that teaching could help to overcome the bottleneck. In other words, it may be that drawing explicit attention to the specific linguistic properties in question may lead to L2 development.[16] As Carroll (2001) points out, findings from research designed to test the effect of explicit grammar instruction 'provide some evidence that metalinguistic instruction has a definite effect on learner behaviour' (pp. 312–3), but it is unclear whether instruction can actually lead to restructuring of the underlying L2 knowledge or whether any positive effects are retained beyond the short term (see also Schwartz and Gubala-Ryzak 1992). In hopes of exploring the role of explicit instruction in SLA, the next section reports on an attempt to enhance the acquisition of *any* through teaching.

[16]There is, of course, debate within theoretical SLA research over whether metalinguistic knowledge can ever affect a learner's unconscious linguistic knowledge of the L2 (Schwartz 1993, among others). This debate requires philosophical discussion of the nature of knowledge beyond the scope of this chapter.

8.4.1 Testing the Effects of Instruction: Gil, Marsden and Whong (To Appear)

Two participant groups in the study included an instructed group who received instruction about *any* (detailed below) and a control group, who received none. The participants were upper-intermediate/advanced-level L2 English speakers much like those in Gil et al. (2011); they were all in the first term of a master's degree in the UK and had recent IELTS scores of 6.0 or higher. The instructed group included 15 native Chinese speakers; the 8 control group participants were native speakers of Chinese ($n=3$), Arabic ($n=3$), Balochi ($n=1$) and Indonesian ($n=1$).[17]

There were two instruction sessions, embedded within linguistics classes where the topic of *any* was relevant to the linguistic content of the class. At the first, explicit instruction was given about grammatical use of *any* in nonveridical contexts (interrogatives, conditionals), about ungrammatical use of *any* in veridical contexts (episodics, progressives) and about the cases in which *any* can occur exceptionally in veridical contexts when licensed by negative inference. Exercises were provided for practice and included lexical items that had not been used in the instruction. The second instruction session took place two weeks later. All of the points from the first instruction were reviewed, and learners were asked to think about how existential quantifiers are expressed in their L1 and whether constraints apply like those that apply to *any*. Four weeks after the second teaching session, the participants completed Posttest 1. This was the same judgement task that was reported in Gil et al. (2011). The same test was then taken again, five months later, as a delayed posttest, Posttest 2. The control group took Posttest 1 and Posttest 2 at the same times as the instructed group.

The results from the previous study, Gil et al. (2011), showed that Chinese-speaking learners of English are likely to have high rates of target-like rejection of *any* in episodics, but that they have difficulty accepting *any* in grammatical contexts where it is licensed by negative inference. The analysis of the data in Gil et al. (to appear) thus focuses on whether the learners differentiate between the following two pairs of sentence types:

25. a. *[nonfactive verb … […*any*…]] vs. *[negative factive verb … […*any*…]]
    b. *[*Even NP … any …*] vs. [*Only NP … any …*]

The results showed that, at Posttest 1, the instructed group differentiated significantly between both pairs in (25), with significantly higher rates of acceptance in both of the grammatical conditions compared with the ungrammatical conditions. The control group also had statistically significant accuracy on the test types in (25b), but made no significant differentiation between the types in (25a). However, in both groups, rates of acceptance in the grammatical conditions were nonetheless

[17] Each group was a subset of the members of two different classes, each with 18 students. However, some members of each class could not be included in the groups because of absence, especially at testing sessions.

Table 8.1 Accuracy rates[a] on grammatical and ungrammatical sentence types containing *any*

Type	Instructed (L1 Chinese)		Uninstructed control (L1 mixed)		Uninstructed comparison (L1 Chinese)
	Posttest 1	Posttest 2	Posttest 1	Posttest 2	
*nonfactive V… *any*	66.67	62.22	66.67	62.22	73.33
neg. factive V … *any*	51.11	47.48	41.67	47.92	39.17
**Even* NP … *any*	82.22	71.11	83.33	91.67	73.33
Only NP … *any*	33.33	33.33	29.17	20.83	30

[a]For the grammatical test types, 'accuracy' is the rate of acceptance, while for the ungrammatical test types, 'accuracy' is the rate of rejection

rather low (<52 %), and, at Posttest 2, neither group differentiates significantly between either of the pairs in (25). Table 8.1 (adapted from Gil et al. to appear) shows the accuracy rates of both experimental groups on all four types in (25) in both posttests and compares these with the accuracy rates on the same types by a group of 20 Chinese-speaking learners of English comprising the 11 learners whose data were reported in Gil et al. (2011), augmented with data from an additional nine proficiency-matched learners.[18]

It is clear from Table 8.1 that all three learner groups demonstrate a similar pattern: higher accuracy in rejecting the ungrammatical types than in accepting the grammatical types. In other words, there is a tendency to reject *any* in all environments. However, Gil et al. (to appear) report that there was no significant difference between the instructed group and the control group. Thus, it appears that explicit grammar teaching did not affect the learners' competence with regard to recognising the licensing of *any* by negative inference, at least not for the participants in this pilot study.

8.4.2 Second Language Acquisition and Language Teaching

The null result in Gil et al. (to appear) is clearly disappointing from the point of view of teaching. This endeavour to find ways to facilitate acquisition of one problematic area of L2 development has not shown that explicit teaching is the answer, with no clear evidence of L2 development in either the short or longer term. However, we will argue that there are still implications to be drawn for language teaching and reasons to be positive about directions that may grow out of this study.

Echoing the core agenda of generative SLA, we start with the consistent finding that very subtle properties of language can be acquired in time, as evidenced by the results of the advanced learners in SLA studies on quantifiers reported in Sections 8.2 and 8.3 and as central to Slabakova's Bottleneck Hypothesis. In terms of generative

[18]None of these 20 Chinese-speaking learners had received explicit instruction about *any*, of the type received by the instructed group.

theory of SLA, this can be taken as evidence for L2 acquisition being guided by UG. However, we see this finding as also providing strong support for the currently accepted communicative language teaching (CLT) approach to language teaching (irrespective of one's view about the role of UG in L2 acquisition). While CLT has usually been associated with functionalist approaches, the formalist research also points to the conclusion that a meaning-based approach is the correct way to teach language. This is especially true in CLT classrooms which provide large quantities of rich, authentic input. Moreover, if, as indicated in the above pilot study, subtle aspects of language cannot be acquired via instruction, then surely an approach which emphasises not only meaning but the active involvement of learners in language activity is the correct way forward, broadly speaking. This stands in stark contrast with some early generative-inspired attempts to teach learners the intricate structural properties of language (e.g. Thomas 1965; Rutherford 1968).

Going beyond this very general implication, however, is the more interesting question of how the successful learners managed to acquire the relevant interpretive phenomena despite poverty of the stimulus. Another way to consider this is to ask what, in the input, could trigger restructuring of a learner's L2 grammar such that knowledge of subtle phenomena like quantifier interpretation automatically arises. Consider, for example, the case of acquisition of the absence of pair-list readings in Japanese questions with a wh-object and quantified subject (Marsden 2008). It was proposed that the pair-list reading is suppressed due to the focusing effect of the syntactic operation of scrambling (Tomioka 2007; see footnote 5, above). If this account is correct, then we might hypothesise that increased exposure to input containing scrambled sentences could lead to earlier acquisition of the restricted interpretation of the Japanese questions, a hypothesis that could be tested in a classroom context. Findings of such a study in conjunction with similar studies of classroom interventions in relation to other poverty of the stimulus phenomena could potentially lead to a greater understanding of how learners acquire knowledge for which there is no direct evidence in the input—to the benefit of both theoretical SLA research and language pedagogy research.

One difficulty that needs to be overcome in any such research, however, is the fact that classroom research is fraught with methodological challenges. You will have noticed methodological weaknesses in the Gil et al. (to appear) study. The majority of these are a result of the fact that research must respect the pedagogical needs of classrooms as a priority. The realities of the classroom inevitably lead to less than ideal experimental conditions, such as differences in numbers of students and student backgrounds. Moreover, the need for multiple input and testing sessions is almost always going to result in reduced numbers as not all students attend all sessions all the time. These challenges say nothing about the commitment of individual students on different days nor the ability for teachers to carefully follow the requirements preferred by the researcher. Added to these classroom-based constraints are other more theory-related questions such as what qualifies as relevant input and how much relevant input is necessary.

Research methodology is one area where collaboration could be fruitful; generative SLA might look to other non-generative SLA paradigms which have much

experience in classroom research. In their extensive meta-analysis of research on L2 instruction, Norris and Ortega (2000) explore the methodological challenges that classroom research poses. But the need for collaboration goes beyond just questions of method. Any development of instruction-based research within generative SLA ought to engage with the large body of existing research on grammar instruction. While that research tends to ask questions of how to teach, with a focus on differences between implicit and explicit or inductive or deductive approaches, the fact that the object of research is grammar means that it is directly relevant to the kinds of questions posed in the classroom research discussed in this chapter. One contribution that generative SLA could make to this research agenda is in its approach to grammar. As noted by Spada and Tomita (2010) in their meta-analysis, researchers often overlook the potential differences between different types of linguistic forms under investigation, making it difficult to draw credible generalisations about the effectiveness of grammar instruction. Thus, both strands of research have much to gain from a more collaborative approach to questions of L2 development.

8.5 Conclusion

We began this chapter with very broad questions of form versus meaning, reviewing a number of studies investigating L2 knowledge of quantifiers which showed evidence of acquisition of both form and meaning. One main question was whether poverty of the stimulus can be overcome in L2 development. Our overall finding has been that though properties of quantifiers are not an easy area for L2 learners, in most cases there is evidence that they can eventually be acquired by advanced learners despite the lack of direct evidence from the L1, from L2 input or from classroom instruction. However, some properties seem to be more readily acquired than others, with particular difficulties with functional items which seem to act as a kind of 'bottleneck' as well as difficulties at the interface of syntax and pragmatics. The final study reviewed in this chapter, the classroom intervention study by Gil et al. (to appear), was not able to show positive effects from instruction on pragmatic licensing of *any*. Nevertheless, we are persuaded that there exists an open opportunity for mutually beneficial collaboration between SLA researchers and language pedagogy researchers who share concerns about the effectiveness of grammar instruction in the language classroom, an opportunity with much potential for language teaching professionals.

References

Adger, David, and Gillian Ramchand. 2005. Merge and move: wh-dependencies revisited. *Linguistic Inquiry* 36: 161–193.

Carroll, Susanne. 2001. *Input and evidence: The raw material of second language acquisition*. Amsterdam/Philadelphia: John Benjamins.

Cheng, Lisa L.-S. 1994. Wh-words as polarity items. In *Chinese language and linguistics II, symposium series of Institute of History and Philology*. Taiwan: Academia Sinica.

Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.

Dekydtspotter, Laurent, Rex A. Sprouse, and Kimberley A. Swanson. 2001. Reflexes of mental architecture in second language acquisition: The interpretation of *combien* extractions in English–French interlanguage. *Language Acquisition* 9: 175–227.

Doughty, Catherine. 2001. Cognitive underpinnings of focus on form. In *Cognition and second language acquisition*, ed. Peter Robinson, 206–257. Cambridge: Cambridge University Press.

Doughty, Catherine, and Jessica Williams. 1998. *Focus on form in classroom second language acquisition*. Cambridge: Cambridge University Press.

Giannakidou, Anastasia. 1997. *The landscape of polarity items*. PhD dissertation, University of Groningen.

Giannakidou, Anastasia. 1998. *Polarity sensitivity as (non)-veridical dependency*. Amsterdam/ Philadelphia: John Benjamins.

Giannakidou, Anastasia. 2006. *Only*, emotive factive verbs, and the dual nature of polarity dependency. *Language* 82: 575–603.

Gil, Kook-Hee, and Heather Marsden. 2010. Semantics before syntax: L2 knowledge of anyone by Korean speaking learners. In *Proceedings of the mind-context divide workshop*, ed. Mike Iverson, Tiffany Judy, Ivan Ivanov, Jason Rothman, Roumyana Slabakova, and Marta Tyzna, 40–51. Somerville: Cascadilla Press.

Gil, Kook-Hee, and Heather Marsden. 2013. Existential quantifiers in second language acquisition: A feature reassembly account. *Linguistic Approaches to Bilingualism* 3(2): 117–149.

Gil, Kook-Hee, Heather Marsden, and Melinda Whong. 2011. L2 acquisition of *any*: Negative evidence, negative implicature and negative L1 transfer. In *Selected proceedings of the 2010 second language research forum: Reconsidering SLA research, dimensions, and directions*, ed. Gisela Granena, Joel Koeth, Sunyoung Lee-Ellis, Anna Lukyanchenko, Goretti Prieto Botana, and Elizabeth Rhoades, 29–39. Somerville: Cascadilla Proceedings Project.

Gil, Kook-Hee, Heather Marsden, and Melinda Whong. to appear. Can explicit grammar instruction serve as evidence for L2 grammar restructuring? In *Advances in Language Acquisition: Proceedings of GALA 2011*, ed. Stavroula Stavrakaki, Polyxeni Konstantinopoulou, and Mariana Lalioti. Cambridge: Cambridge Scholars Publishing.

Hoji, Hajime. 1985. *Logical form constraints and configurational structures in Japanese*. PhD dissertation, University of Washington.

Jun, Sun-Ah, and Mira Oh. 1996. A prosodic analysis of three types of wh-phrases in Korean. *Language and Speech* 39: 37–69.

Klima, Edward. 1964. Negation in English. In *The structure of language*, ed. Jerry A. Fodor and Jerrold J. Katz, 246–323. Englwood Cliffs: Prentice-Hall.

Li, Yen-Hui Audrey. 1992. Indefinite wh in Mandarin Chinese. *Journal of East Asian Linguistics* 1: 125–155.

Lin, Jo-Wang. 1998. On existential polarity wh-phrases in Chinese. *Journal of East Asian Linguistics* 7: 219–255.

Linebarger, Marcia C. 1980. *The grammar of negative polarity*. PhD dissertation, Massachusetts Institute of Technology.

Long, Michael H. 1991. Focus on form: A design feature in language teaching methodology. In *Foreign language research in cross-cultural perspective*, ed. Kees de Bot, Ralph B. Ginsberg, and Claire J. Kramsch, 39–52. Amsterdam: John Benjamins.

Marsden, Heather. 2008. Pair-list readings in Korean-Japanese, Chinese-Japanese and English-Japanese interlanguage. *Second Language Research* 24: 189–226.

Marsden, Heather. 2009. Distributive quantifier scope in English-Japanese and Korean-Japanese interlanguage. *Language Acquisition* 16: 135–177.

Musumeci, Diane. 1997. *Breaking tradition: An exploration of the historical relationship between theory and practice in second language teaching*. Boston: McGraw Hill.

Norris, John M., and Lourdes Ortega. 2000. Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning* 50: 417–528.

Rutherford, William E. 1968. *Modern English: A textbook for foreign students*. New York: Harcourt, Brace and World, Inc.

Schwartz, Bonnie D. 1993. On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition* 15: 147–163.

Schwartz, Bonnie D., and Magda Gubala-Ryzak. 1992. Learnability and grammar reorganization in L2A: Against negative evidence causing unlearning of verb movement. *Second Language Research* 8: 1–38.

Slabakova, Roumyana. 2008. *Meaning in the second language*. Berlin: Mouton de Gruyter.

Sorace, Antonella. 2011. Pinning down the concept of 'interface' in bilingualism. *Linguistic Approaches to Bilingualism* 1: 1–33.

Sorace, Antonella, and Francesca Filiaci. 2006. Anaphora resolution in near native speakers of Italian. *Second Language Research* 22: 239–368.

Spada, Nina, and Yasuyo Tomita. 2010. Interactions between type of instruction and type of language feature: A meta-analysis. *Language Learning* 60: 263–308.

Szabolcsi, Anna. 2004. Positive polarity-negative polarity. *Natural Language and Linguistic Theory* 22: 409–452.

Thomas, Owen. 1965. *Transformational grammar and the teacher of English*. New York: Holt, Reinhart, and Winston.

Tomioka, Satoshi. 2007. Pragmatics of LF intervention effects: Japanese and Korean *wh*-*interrogatives*. *Journal of Pragmatics* 39: 1570–1590.

Tsimpli, Ianthi, and Antonella Sorace. 2006. Differentiating interfaces: L2 performance in syntax-semantics and syntax-discourse phenomena. In *Proceedings of the 30th annual Boston University conference on language development*, ed. David Bamman, Tatiana Magnitskaia, and Colleen Zaller, 653–664. Somerville: Cascadilla Press.

White, Lydia. 2003. *Second language acquisition and Universal Grammar*. Cambridge: Cambridge University Press.

Yuan, Boping. 2010. Domain-wide or variable-dependent vulnerability of the semantics-syntax interface in L2 acquisition? Evidence from wh-words used as existential polarity words in L2 Chinese grammars. *Second Language Research* 26: 219–260.

Chapter 9
Explicit Article Instruction in Definiteness, Specificity, Genericity and Perception

Neal Snape and Noriaki Yusa

9.1 Introduction

In the early SLA morpheme order studies (e.g. Dulay and Burt 1974), researchers found that the articles (*the* and *a*) were ranked as the third most difficult out of eight morphemes in order of difficulty to acquire. Since the early work on morpheme orders, there has been a great deal of research carried out in generative SLA in relation to the acquisition of the nominal domain, in particular, articles in English (e.g. see Master 1987).

In the recent L2 generative literature, there have been a number of studies (Ionin et al. 2004; Trenkic 2008, amongst others) investigating the acquisition of the nominal domain by L2 speakers, but there has been little to no discussion on article instruction (see recent applied cognitive studies by Krol-Markefka 2008 and White 2010). The purpose of this chapter is to discuss the generative empirical findings and theoretical implications of L2 article acquisition and what they mean for instruction in SLA (White 1991; Schwartz and Gubala-Ryzak 1992).

There are a number of studies related to article pedagogy (Master (1990, 1995) and Pica (1983), amongst many others), but since the works by Peter Master, there has been relatively little discussion on article pedagogy. Nevertheless, there has been a great deal of research on the acquisition of articles by L2 speakers from different first language backgrounds. Our study addresses the issue of article pedagogy and discusses the implications of explicit instruction.

N. Snape (✉)
Department of English, Gunma Prefectural Women's University,
Tamamura-machi, Sawa-gun, Gunma-ken, Japan
e-mail: nealsnape@gpwu.ac.jp

N. Yusa
Miyagi Gakuin Women's University, Sendai, Miyagi-ken, Japan
e-mail: yusa@mgu.ac.jp

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*,
Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_9,

The subsequent sections of this chapter will discuss the following: Section 9.2 provides an overview of definiteness, specificity and genericity, and Section 9.3 looks at the perception of articles. Sections 9.2 and 9.3 also discuss the implications for the teaching of articles. Section 9.4 examines the role of positive and negative evidence in instructed SLA by discussing studies that have had success and failure in explicit instruction. Section 9.5 presents the current study and Section 9.6 discusses implications of our findings for article instruction. The final section of this chapter provides a summary and conclusion.

9.2 Definiteness, Specificity and Genericity

9.2.1 Definiteness and Specificity

Ionin et al. (2004) define definiteness (based on Heim's 1991 definition of definiteness) and specificity (based on Fodor and Sag's 1982 definition of specificity) as the following:

1. Definiteness and Specificity
   If a Determiner Phrase (DP) of the form [D NP] is…
   a. [+definite], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
   b. [+specific], then the speaker intends to refer to a unique individual in the set denoted by the NP, and considers this individual to possess some noteworthy property.

   (Taken from Ionin et al. 2004: 5)

The crucial difference between the two features is that [+definite] is a shared state of knowledge between the speaker and hearer and [+specific] is knowledge only held by the speaker. A language like English marks only the definiteness distinction with articles, and this is illustrated by the examples in (2) and (3), which show that *the* is used in contexts that are [+definite] and *a* in contexts that are [−definite], as in (4) and (5), regardless of whether the context is [+specific] or [−specific]. The correct article choices are shown with the labels [+/−definite, +/−specific] for the reader's convenience in the examples below, though in the task itself no labels or definitions were given to the participants.

2. [+definite, +specific] (correct article choice is *the*)
   Conversation between two police officers
   Police Officer Clark: I haven't seen you in a long time. You must be very busy.
   Police Officer Smith: Yes. Did you hear about Miss Sarah Andrews, a famous lawyer who was murdered several weeks ago? We are trying to find (a, the, -) murderer of Miss Andrews—*his name is Roger Williams, and he is a well-known criminal*.

3. [+definite, –specific] (correct article choice is *the*)

   Conversation between a police officer and a reporter
   Reporter: Several days ago, Mr. James Peterson, a famous politician, was murdered! Are you investigating his murder?
   Police officer: Yes. We are trying to find (a, the, -) murderer of Mr. Peterson—*but we still don't know who he is*.

4. [–definite, +specific] (correct article choice is *a*)

   In an airport, in a crowd of people who are meeting arriving passengers
   Man: Excuse me, do you work here?
   Security guard: Yes.
   Man: In that case, perhaps you could help me. I am trying to find (a, the, -) red-haired girl; *I think that she flew in on Flight 239.*

5. [–definite, –specific] (correct article choice is *a*)
   Sam: I'm having some difficulties with my citizenship application.
   Julie: What are you going to do?
   Sam: Well, I need some advice. I am trying to find (a, the, -) lawyer *with lots of experience. I think that's the right thing to do.*

Conversely, in Samoan, the articles *le* and *se* mark the specificity distinction, as shown in examples (6) and (7).[1] The article *le* can be definite or indefinite as in (6), where the speaker has a particular movie in mind (specific), whereas *se* can be definite or indefinite as in (7) where the speaker has no particular movie in mind (non-specific). Only the article *le*, not *se*, can be definite and non-specific as in (8) because the use of *se* is restricted to indefinite non-specific contexts.

6. [–/+definite, +specific]: *le*

Ou	te	fia	matamata	i	le	ata –
I	TAM	want	watch	LD	SP.SG	movie
‘ae		‘ua	leai		se	avanoa
but		TAM	no		NSP.SG	space

   ‘I want to see a movie – but there is no space (or: it's sold out).’

7. [–/+definite, –specific]: *se*

Ou	te	fia	matamata	i	se	ata–
I		TAM	want watch	LD	NSP.SG	movie
ae	le’i	mautinoa	po’o	le a	le	ata
but	not	know	Q:which		SP.SG.ART	movie

   ‘I want to see a movie – but I don't know which movie.’

[1]The abbreviations used in the glosses of the Samoan examples in (6) and (7) are as follows (from Fuli 2007): ART = article, LD = locative directional particle, NSP = non-specific, SG = singular, SP = specific, Q = question and TAM = tense aspect marker.

8. [+definite, –specific]: *le*

A'fai 'ete mana'o'e tautala i ***selle*** malo fa'atali se'i uma
if you want you speak to ART winner wait till over
le tautuuna.
ART race
'If you want to talk to the winner, stay until the race is over.'
(From Fuli 2007)

In the case of L2 acquisition of English, Ionin et al.'s (2004) aim is to find out if L2 speakers have full access to Universal Grammar (UG), including the settings of a semantic parameter (the Article Choice Parameter) which regulates article choice. Ionin et al. (2004: 12) define the Article Choice Parameter as the following:

9. The Article Choice Parameter
A language that has two articles distinguishes them as follows:

a. The Definiteness Setting: Articles are distinguished on the basis of definiteness.
b. The Specificity Setting: Articles are distinguished on the basis of specificity.

They predict that L2 speakers might 'fluctuate' between the two universal features definiteness (for a language like English) and specificity (for a language like Samoan) if they have full access to UG and the parameter-setting options. In order to set the parameter to the appropriate value for English, L2 learners must be provided with explicit (positive and negative) evidence, since the phenomena related with semantics are not visible. To test their 'Fluctuation Hypothesis', Ionin et al. (2004) devised a forced-choice elicitation task which consisted of 76 short dialogues. Thirty Russian (mean age = 35 years) L2 speakers and 40 Korean (mean age = 31 years) L2 speakers were recruited to take part in the study as both languages lack articles and do not have any other direct morphology to encode definiteness or specificity. All the participants completed the written portion of the Michigan test of L2 proficiency and were placed in either the intermediate or advanced group. Participants were then asked to choose between the most appropriate article *the*, *a* and – (no article) to fill a gap in the dialogue, basing their choice on the preceding context (see task examples from 3 to 6 above). They found that the Russian and Korean speakers fluctuated between the parameter settings definiteness and specificity as *a* was selected for [+definite, –specific] contexts (Koreans = 14 % and Russians = 33 %) and *the* for [–definite, +specific] contexts (Koreans = 22 % and Russians = 36 %). For the [+definite, +specific] contexts, *the* was correctly selected over 80 % of the time by the Russian and Korean speakers, and for the [–definite, –specific] contexts, *a* was correctly selected over 84 % of the time.

Many studies have since tested the 'Fluctuation Hypothesis' with different L2 populations (see García Mayo and Hawkins 2009), finding similar results to Ionin et al. (2004). But what are the implications for article instruction based on these findings? Trenkic (2008) focuses on what is explicitly stated by the speaker and the speaker's familiarity with the referent in (2) versus familiarity denied by the

speaker in (3). In (2) the italicised part of the dialogue shows that the speaker identifies and is familiar with Roger, who has the noteworthy property of being a well-known criminal; in (3), however, the speaker identifies someone (the murderer) but then proceeds to deny any familiarity with the referent as no name is given. Ionin et al. (2004) concede that perhaps in the case of adult L2 speakers, there is use of contextual cues such as the presence or absence of explicitly stated knowledge. In a fill-in-the-article test and a think-aloud interview administered by Goto-Butler (2002), it is clear that Japanese L2 learners use a number of metalinguistic strategies in their article choices. Learners stated that they chose a certain article in the fill-in-the-article test because of countabilty, referentiality and other reasons or because it 'sounded right'. The largest percentage of errors produced in article choices was due to referentiality, or what we term here as specificity. The other major obstacle preventing learners' correct article choices was related to noun countability. Without going into a theoretical discussion on whether L2 speakers have full access to semantic universals via UG (see Ionin et al. 2009) or whether adult L2 learners rely solely on metalinguistic strategies (see Trenkic 2008), we consider how the definiteness and specificity distinction can be taught to Japanese learners of English.

In order for L2 learners to be able to select the appropriate article in short dialogues like those dialogues in Ionin et al.'s (2004) study, it is necessary to provide L2 learners with some framework of how definiteness and specificity function in English. Learners can be shown how the definite article is used to show familiarity with the referent, as in (2) above, where the speaker explicitly states that he knows Roger. In (3) the speaker denies familiarity of who the murderer is, but the speaker and hearer have shared knowledge of the murdered person (James Peterson), and there is a definite person associated with his murder, so the use of the definite article is appropriate, not the indefinite article. If Ionin et al. (2009) are on the right track, more focus should be spent on the [+definite, –specific] context in English education since only adults make mistakes in article choice in this context. Learners can be told that the person is a non-specific person, but in the mind of the speaker, it is clear that a particular individual has been identified within a set of individuals. For the indefinite article in (4), learners can be instructed that the speaker has a specific girl in mind (a girl with the noteworthy property of having red hair), but the hearer has no knowledge of a girl as the situation takes place between two strangers in a busy airport. What learners need to know is that in this type of context the indefinite article can refer to a specific individual, as teachers and textbooks tend to associate the indefinite article with marking non-specific referents only (White 2010). The indefinite article in (5) shows the speaker being uncertain about his situation with his citizenship application and wants to find a lawyer to help him. The speaker has no specific person in mind (with a noteworthy property), and the discourse between Sam and Julie shows no indication that the hearer (Julie) knows anything about Sam's situation. In other words, there is no shared knowledge between the speaker and hearer about this topic, and the speaker has no specific lawyer in mind so the indefinite article is the most appropriate article choice.

9.2.2 Genericity

Krifka et al. (1995) provide a useful account of genericity by considering those generics which are classified as generic NPs and those which are classified as sentence-level generics. Generic NPs refer to a well-established 'kind' with kind predicates such as *be extinct*, as in example (10a)[2]:

10. a. The dinosaur is extinct.
    b. #A dinosaur is extinct.

The subject NP *the dinosaur* must denote a kind since only a kind, not an individual or a group of individuals, can be extinct. Example (10a) is acceptable as an NP-level generic as it is kind-referring, that is, it is a statement about the entire kind of dinosaurs. The definite NP in (10a) can be used as a kind-referring term, but the indefinite NP cannot because the NP *a dinosaur* in (10b) is incompatible with a kind predicate such as *be extinct*. The kind predicate *be extinct* can also be used with bare plural NPs, where the NP again refers to the entire kind, as in (11a):

11. a. Dinosaurs are extinct.
    b. #The dinosaurs are extinct.

Only (11a) can refer to the kind *dinosaurs*, whereas within Krifka et al.'s (1995) discussion on generics, example (11b) is ungrammatical with a kind predicate as *the dinosaurs* can only have a specific interpretation, that is, a specific group of individual dinosaurs.

Sentence-level genericity refers to those generics that do not state anything about an object but about objects in general or a generalisation based on properties of individual objects (Krifka et al. 1995). For example, in (12a), the characterising sentence is about dogs in general. In contrast, (12b) can only refer to a specific dog rather dogs in general.

12. a. A dog barks.
    b. #The dog barks.

Theories of sentence-level genericity typically postulate a generic operator, GEN, (as discussed in Krifka et al. 1995), which applies at the sentence level and which quantifies over individuals or over situations. Bare plurals in English can also be at sentence level, as shown in the example in (13a):

13. a. Dogs bark.
    b. #The dogs bark.

(13a) is a characterising sentence like the indefinite singular sentence in (12a). Example (13b), however, can only refer to a specific set of dogs.

Recent work by Ionin et al. (2011) extends their investigation of semantics/morphology mappings of definiteness and specificity to generic interpretations.

[2]The symbol # in (10b) and elsewhere means that the sentence cannot receive a generic interpretation.

Based on the distinction provided by Krifka et al. (1995), Ionin et al. (2011) created generic NP-level test items and sentence-level generic test items. Distracter items were anaphoric contexts. All test items and distracters appeared as singular and plural in an acceptability judgement task. Using a scale from 1 (unacceptable) to 4 (acceptable), the following unacceptable and acceptable generic sentences from their task are marked in grey in (14) and (15):

14. NP-level generic

These woods are really beautiful. And you can do a lot in them: you can hike, pick mushrooms and have picnics. But be very careful - don't leave food around! Otherwise, you might attract animals. You see ...

a. brown bears are common in these mountains.	1	2	3	4
b. a brown bear is common in these mountains.	1	2	3	4
c. the brown bears are common in these mountains.	1	2	3	4
d. brown bear is common in these mountains.	1	2	3	4
e. the brown bear is common in these mountains.	1	2	3	4

15. Sentence-level generic

My brother has been in a bad mood lately. And no wonder, his apartment is so uncomfortable, it must be very depressing to live there. I recommend he buy something to cheer up his place and make it more comfortable. For example ...

a. a green lamp is very relaxing.	1	2	3	4
b. green lamps are very relaxing.	1	2	3	4
c. the green lamps are very relaxing.	1	2	3	4
d. the green lamp is very relaxing.	1	2	3	4
e. green lamp is very relaxing.	1	2	3	4

Ionin et al. (2011) included 33 Russian (mean age=20.8 years) and 45 Korean (mean age=26.2 years) L2 speakers in their study, and all the participants were determined to be at an advanced level of English via a cloze test. They found that both L2 groups were much better at rating the indefinite singular and plural generics at the sentence level as acceptable continuations of the story. In contrast, both groups of learners were worse at rating the definite article for singular generic NPs as acceptable.

When it comes to teaching articles and the use of articles for generic reference, most textbooks and teachers alike offer very little instruction. In fact, no textbook mentions that there are two types of genericity: NP-level and sentence-level generic sentences. Corpus findings show that the definite generic article is used less than 2.5 % in conversation, less than 2.5 % in fiction, 5 % in academia and 5 % in the news (Biber et al. 1999). But learners can possibly benefit from instruction on generics if the instruction makes the distinction Krifka et al. (1995) use between generics at the NP level and generics at the sentence level.

9.3 Perception

There have been a number of studies that have investigated the perception of articles by L2 learners (Sudo and Kaneko 2005, amongst others). Typically, learners have problems in perceiving articles in spoken discourse because the most common vowel in connected speech is a schwa /ə/. For example, in the sentence in example (16), the article *a* is reduced:

16. I have a meeting to go to */aɪv ə mi:tɪŋ tə gəʊ tu:/*

Japanese L2 speakers find it difficult to perceive an article within the utterance due to differences in prosodic structure between Japanese and English, vowel reduction in English (not present in Japanese) and the low frequency in sound in English. To test whether L2 speakers could perceive the article, Pierce and Ionin (2011) tested Chinese and Korean speakers using a transcription task which consisted of 18 grammatical sentences spoken in a conversational style by a native speaker of English. The L2 speakers were instructed to write down exactly what they heard, and they were allowed to listen to each sentence more than once. To avoid any difficulties that could be attributable to short-term memory effects or online processing, they let the L2 speakers listen to the sentences as many times as they liked, since the aim of the task was to test their perception. The task design crossed three NP types (definite singular/plural, indefinite singular and bare plural) with three positions in the sentence (P1 = subject, P2 = indirect object, P3 = direct object), and the indirect object always preceded the direct object. The test sentences are based on Pierce and Ionin's test sentences. Examples are provided in (17):

17. a. I heard that (P1) international students asked (P2) the professor (P3) a difficult question.
    b. I don't know if a teacher gave a new student notebooks.
    c. She said that the teachers gave students the difficult tests.

To avoid effects of greater perceptual saliency at the beginning of a matrix clause, all three target positions were located inside an embedded dependent clause. The results of their task showed that the L2 speakers (both Chinese and Korean) were inaccurate in their perception of articles. Errors ranged from substitution of *the* for *a* in position 1 and article omissions of *the* and *a* in position 3. Both error types occurred in position 2. They found that though the Korean speakers were more accurate on the task than the Chinese speakers, the pattern of error types was similar.

In summary, this section has looked at definiteness, specificity, genericity and the perception of English articles (*the* and *a*). In addition, the empirical findings and the implications for article instruction were discussed. In the following section, the role of positive and negative input is examined with reference to studies that have found both types of input effective for learner interlanguage development (White 1991) and those that argue that explicit positive evidence and negative evidence cannot reorganise an L2 grammar (e.g. Schwartz and Gubala-Ryzak 1992).

9.4 The Role of Positive and Negative Evidence in Instructed SLA

Positive evidence (or positive input) refers to the primary linguistic data children are exposed to in everyday language use, typically by their parents or caregivers. In parameter-setting models of L1 acquisition, it is proposed that the combination of the innate principles and parameters triggered by exposure to positive evidence suffices it for children to acquire the grammar of the language. For example, a child acquiring L1 English will be exposed to numerous utterances whereby the subject precedes the verb and the verb precedes the object because English is an SVO-type language, for example, $_{S}$*John* $_{V}$*likes* $_{O}$*Mary*. The verb *likes* is the head, *John* is the subject, and *Mary* is the complement. The head parameter (Chomsky 1981) is set to the 'head-first' setting based on the positive evidence received by the child as English is a head-first language. Conversely, a Japanese child acquiring Japanese as her L1 is exposed to an SOV-type language (a head-last language), for example, $_{S}$John $_{O}$Mary $_{V}$likes; hence, the head parameter is set for head-last. Positive evidence in L1 acquisition is all that is required for the child to successfully acquire her L1. In other words, all the child requires is grammatical input to acquire the L1. Negative evidence plays no role in L1 acquisition. Despite the lack of negative evidence in L1 acquisition, children come to know that certain sentence types are disallowed. The knowledge of the child's L1 is acquired without the need for explicit or implicit instruction in grammatical and ungrammatical usage.

Notwithstanding claims by scholars such as Bley-Vroman (1990) that SLA is *fundamentally* different from L1 acquisition, there have been relatively few studies that have looked at the role of positive and negative evidence in (instructed) SLA (Izumi and Lakshmanan 1998; Master 1990; Trahey and White 1993; Trahey 1996; VanPatten and Cadierno 1993; White 1991). Our study follows previous studies by providing positive evidence to learners in the form of comprehensible input, but as in the previous studies, positive evidence may not be enough to trigger acquisition as some language phenomena may additionally require negative evidence. One study that examined the role of negative evidence was White (1991). White (1991) argues that L2 learners may make incorrect assumptions about the L2 they are learning, and positive evidence alone may not be enough to disconfirm, for example, that certain adverb placements in L2 English are not possible. White (1991) found that form-focused instruction on adverb placements in English, including negative evidence, was more effective in aiding L2 speakers than supplying them with positive evidence alone. French differs from English in adverb order. English allows subject-adverb-verb order (e.g. *The boys carefully wash the car*) but in French sentence-internal adverbs must appear after the verb, thus subject-verb-adverb order, as in (18):

18. Jean regarde souvent la television.
    John watches often the television.

The gloss in (18) shows the correct adverb order for French, but **John watches often the television* is ungrammatical in English. White's (1991) study examined the

effectiveness of instruction on adverb placement in L2 English. All the participants were 11- and 12 year-old L1 French speakers. One group ($n=82$) was the experimental group and the other was the control group ($n=56$). Both groups received pretests on adverb placement using three different tasks: a grammaticality judgement task, a preference task and a manipulation task. Instruction took place in the form of 5 intensive hours in the first week, and then in the second week, follow-up activities were given to the participants for 2 hours. All the instructors were native speakers who were encouraged to point out and correct any errors throughout the instruction period. Upon completion of the instruction, both groups received posttests twice, the first one directly after instruction and the following posttest 5 weeks later. The results show clear differences between the two groups on all three tasks. The experimental group clearly benefited from the positive and negative evidence they received in the instruction period. White (1991) concludes that learnability considerations may mean that one solution to the L2 learner's problem is the use of negative evidence.

Others, such as Krashen (1985) and Schwartz and Gubala-Ryzak (1992), claim that L2 acquisition proceeds along the same path as L1 acquisition and instruction and error correction play no role in the development of competence in the L2. L2 speakers simply need to be exposed to primary linguistic data in the environment in order for their interlanguage grammars to develop (Schwartz 1993). Schwartz and Gubala-Ryzak (1992) argue that 'the grammar-building process cannot make use of NE (negative evidence) to restructure (Interlanguage) grammars – irrespective of logical need' (p. 1). In the case of the study by White (1991), Schwartz and Gubala-Ryzak (1992) believe that the participants' underlying competence in White's study had not changed due to instruction and the use of positive and negative evidence. Rather, they argue that the learners understood that certain surface patterns are either possible or impossible in English and they simply use a strategy which can be applied when asked to complete experimental tasks. Generative linguistics has mostly been interested in strict competence issues, but we need to go beyond simply arguing whether or not a strategy was used (see Yusa et al. 2011 for neuroimaging evidence that demonstrates L2 learners can learn more than is instructed, arguing against the Fundamental Difference Hypothesis). The question is whether instruction can help lead learners to target-like performance in the L2 through the use of positive and negative evidence.

The design of our study is similar to that of White (1991) and others who have provided positive and negative evidence in instructed SLA. Details of our study are discussed in the next section.

9.5 Our Study

Our pilot study is the first attempt we know of to teach L2 learners about the complexity of article choice and the perception of articles based on recent empirical findings in the L2 generative literature. For our study, we tried to recruit as many students as possible during a busy university semester.

9.5.1 Participants

As an incentive to obtain participants for our study, flyers were given out in Japanese explaining what the study was about and students were told that their names would be placed in a lottery if they participated: The winner would receive a 3,000 yen Apple iTunes music voucher. As a result of our recruitment drive, we ended up with 16 participants in total. Two of the participants had to be excluded from the study as they were more advanced than the other participants. All of our remaining participants were at the same proficiency level, high intermediate which was determined by the Test of English for International Communication (TOEIC) scores. The participants were then divided into two groups: One group called the 'experimental' group and the other called the 'control' group. The participants were all 3rd year students at a university in Japan, and all received regular exposure to English. None of the participants had spent any long period of time studying English outside of Japan.

9.5.2 Procedure, Tasks and Instruction

For our pilot study, all the participants were asked to come to a classroom on a certain date, and each one was given the pretests. The pretests consisted of 3 tasks:

Task 1: A forced-choice elicitation task
Task 2: An acceptability judgement task
Task 3: A transcription task

Task 1 includes test items from Ionin et al.'s (2004) original forced-choice elicitation task with distracter items. Task 2 includes test items based on items used in Ionin et al.'s (2011) acceptability judgement task, and Task 3 is based on the transcription task administered in the Pierce and Ionin (2011) study. All the tasks had randomised items (target items and distracters), and each task supplied written instructions in Japanese and an example and a practice item for participants to complete before starting the main tasks. Two versions of the forced-choice elicitation task and the acceptability judgement task were created to avoid any ordering effects, and the participants were given a different version of the task for the pretest, posttest 1 and posttest 2, for example, version 2 if they received version 1 before and then version 2 again. Only one version of the transcription task was created as the instructor could randomise the audio recordings for each test.

Upon completion of the pretests, all the participants in our study were randomly split into the two groups: 7 participants in the 'experimental' group and 7 participants in the 'control' group. The participants in the experimental group were asked to come back to the classroom the same time one week later to start instruction. The control group was told to return 4 weeks later to take posttest 1. The design of the study is provided in Table 9.1.

Table 9.1 Procedure for both groups

	Experimental group ($n=7$)	Control group ($n=7$)
1st week	Pretest (3 tasks)	
2nd week	Instruction period (70 min each week)	No instruction
3rd week		
4th week		
5th week	Posttest 1 (3 tasks)	Posttest 1 (3 tasks)
7th week	Posttest 2 (3 tasks)	Posttest 2 (3 tasks)

There were no absentees for the instruction period as all the participants came on time and stayed for the full 70 minutes. During the instruction period, the participants were told that they could ask the instructor questions at any time. The instruction period began in week 2, after the pretest, with instruction on the definiteness and specificity distinctions in week 2, perception in week 3 and genericity in week 4 (see Appendix for details). In order to avoid overloading the participants with examples of definiteness, specificity and genericity, we purposely chose to teach the perception class in between the classes focusing on article choices. Instruction for week 3 took place in a computer-assisted language lab where all the participants had access to Windows-based PCs with the software program Praat (Boersma and Weenink 2006) already installed on each machine. Participants already had knowledge of how to use Praat, so no further instruction on the use of Praat was required in week 3. The participants were given audio WAV files (sentences recorded by a native speaker of English) by the instructor to place onto their PCs and analyse in Praat (Wilson 2008). The aim of using Praat was to allow the participants to see waveforms and spectrograms of the sentences and then, using a textgrid, locate within those sentences the definite article, indefinite article and plural *–s*. An example of what the participants viewed on their computer screens is provided in Fig. 9.1.

The waveform and spectrogram simply provide visual information of the sentence, for example, *He said that the doctor gave a patient drugs*. The visual information shows the participants' loudness, pitch and intensity of the speaker's voice. The most useful part of the visual is the textgrid, which each participant creates by herself. The textgrid allows the participant to locate individual words in the sentence and then to create boundaries between those words, as illustrated in Fig. 9.1. The instructor demonstrated to the participants how to create a textgrid and boundaries by projecting the instructor's computer screen to all the participants via a central monitor. The participants were shown how to isolate the articles within the sentences and in the case of the definite article to isolate the consonant /ð/ from the vowel /ə/. The instructor then demonstrated how to measure the length of the article vowel. The objective of using a textgrid is to identify the vowel and measure it. This gives participants an idea of how to identify weak vowel sounds within sentences. After the demonstration the participants could work by themselves whilst the instructor walked around monitoring the participants' progress and fielding any questions that they had.

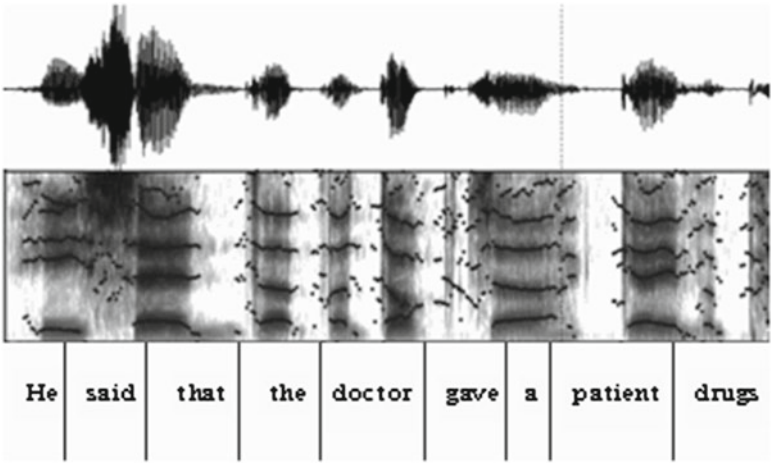


Fig. 9.1 A waveform (*above*), spectrogram (*middle*) and textgrid (*below*)

All sentences used in each of the lessons were different from the ones used in the tasks. Posttest 1 was given to all the participants (the experimental and control groups) 1 week after the instruction period had finished, and posttest 2 was administered to all the participants 2 weeks after posttest 1. The results of our tasks are presented below.

9.5.3 Results

The results of our pilot study are discussed in relation to each task for both groups. The forced-choice elicitation task results are presented in Figs. 9.2 and 9.3 below.

The pretest results in Fig. 9.2 show that both groups perform better with selecting the definite article for [+definite, +specific] contexts but less so with the definite article for [+definite, –specific] contexts. Despite instruction the posttests show no difference between the experimental group and the control group in both contexts. The result is the same for the indefinite article in Fig. 9.3. Both groups perform well at selecting the indefinite article for [−definite, +specific] contexts and for [−definite, −specific] contexts.

The results for the acceptability judgement task have been divided into correct and incorrect choices and are provided in Figs. 9.4 and 9.5. Correct choices refer to the acceptable selection of an article for singular contexts and the bare plural for plural contexts, and incorrect choices refer to the unacceptable selection of an article, definite plural or bare noun phrase.

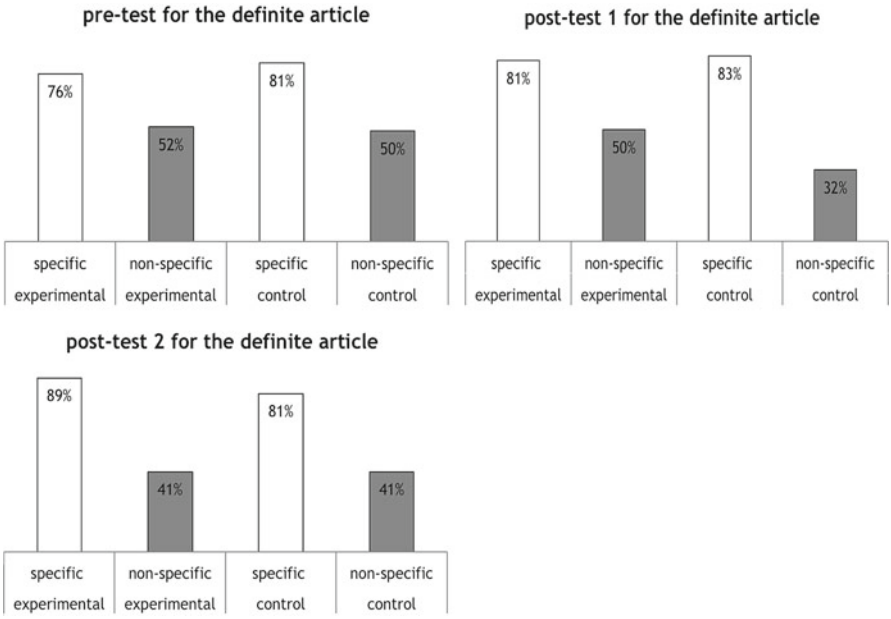


Fig. 9.2 Pretest and posttest results from the forced-choice elicitation task: percentage (out of 100 %) of correct choice of the definite article

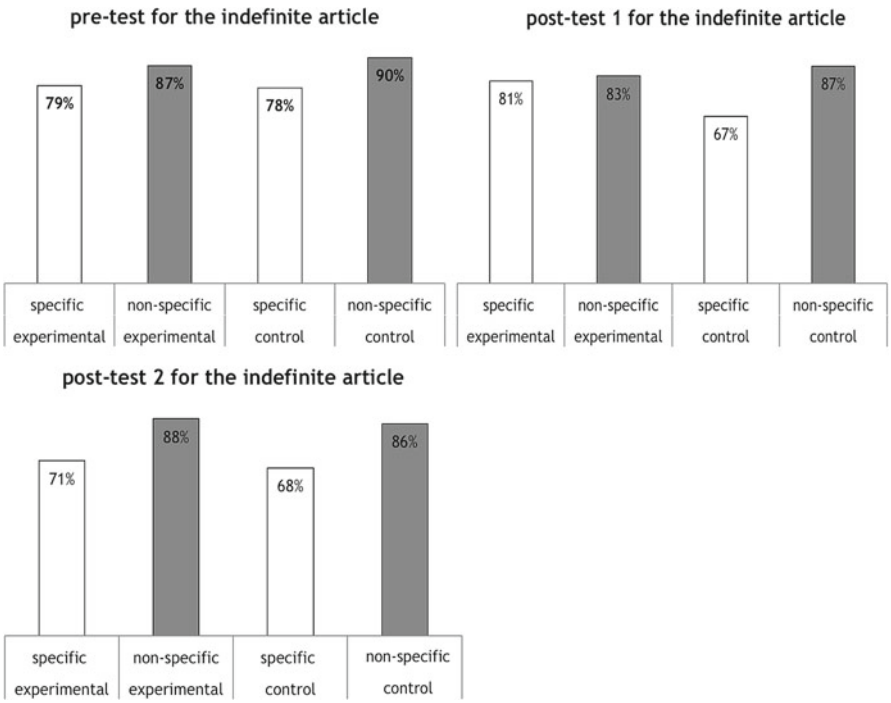


Fig. 9.3 Pretest and posttest results from the forced-choice elicitation task: percentage (out of 100 %) of correct choice of the indefinite article

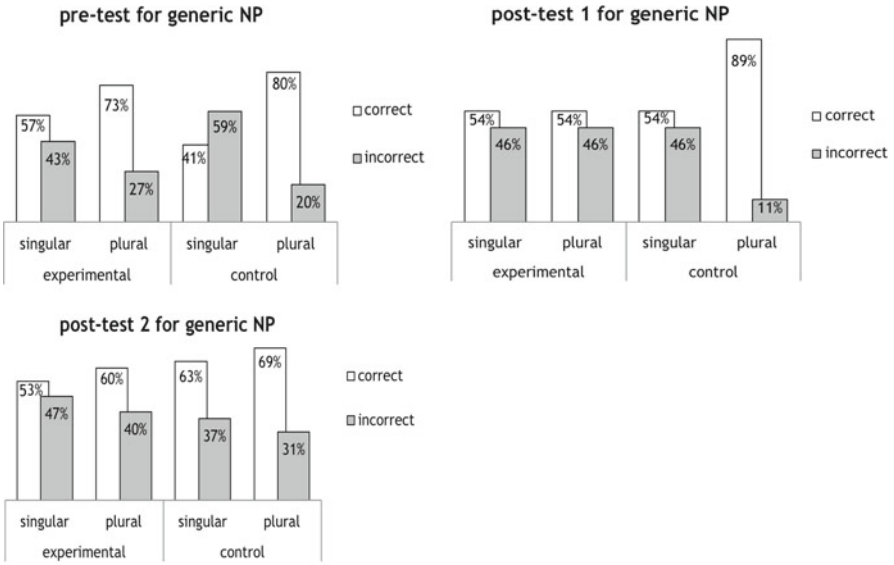


Fig. 9.4 Pretest and posttest results from the acceptability judgement task: percentage of correct and incorrect choices of the definite article and bare plural

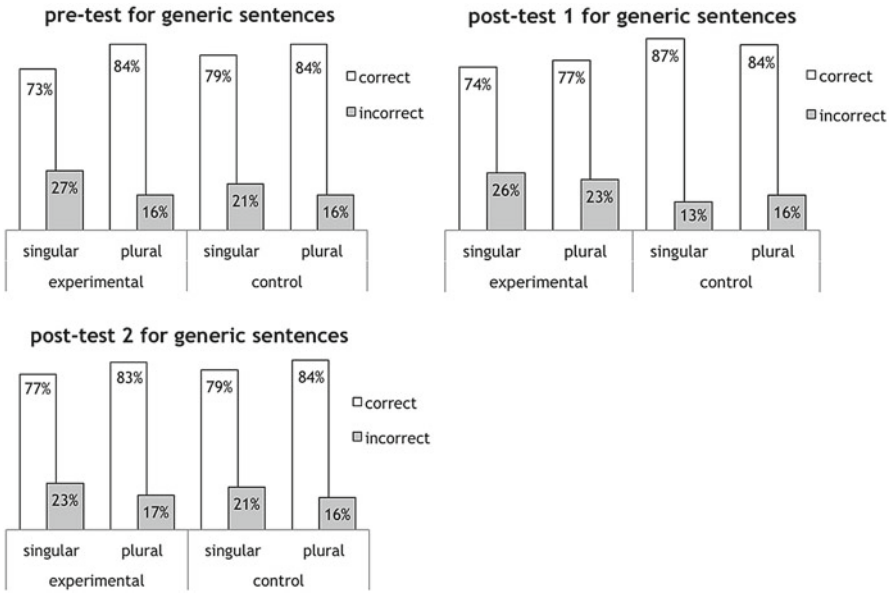


Fig. 9.5 Pretest and posttest results from the acceptability judgement task: percentage of correct and incorrect choices of the indefinite article and bare plural

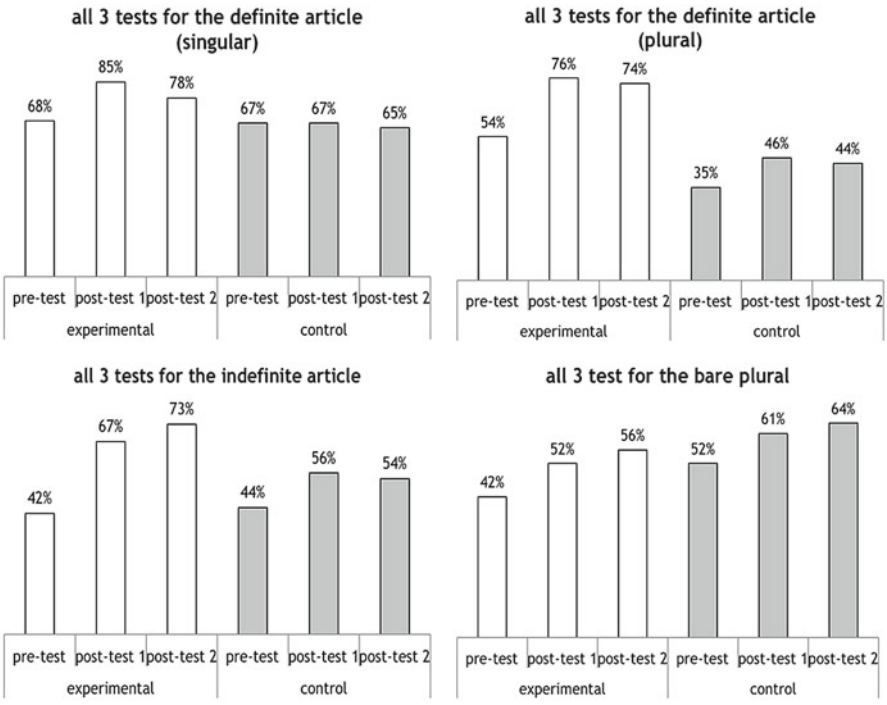


Fig. 9.6 Pretest and posttest results from the transcription task: percentage (out of 100 %) of correct transcriptions of the definite article (singular/plural), the indefinite article and the bare plural

The pretest results indicate that the learners are better at accepting the indefinite article as appropriate for the sentence-level generics and the bare plural in both conditions: the NP-level generics and the sentence-level generics. But both groups perform worse in the singular NP-level generic context as the definite article is judged as being unacceptable. Posttest 1 and posttest 2 show no real differences between the two groups apart from the bare plural for the NP-level generics. Interestingly, the control group performs much better on the task than the experimental group.

The results from the transcription task are presented in Fig. 9.6. The results show that for both groups across the pretests and the two posttests, there is no difference in perceiving the definite singular. In contrast, a significant difference was found using the non-parametric Mann-Whitney U-test between the two groups in perceiving the definite plural ($p < 0.05$) on posttest 1 and posttest 2. The non-parametric within group Wilcoxon signed-rank test shows that the experimental group improved in their perception of the indefinite article between the pretest and posttest 1 ($p = 0.026$) and between the pretest and posttest 2 ($p = 0.027$). No differences were found between the two groups or within the experimental group for the bare plural. The implications of our findings for article instruction are discussed in the next section.

9.6 Implications of Our Study for Article Instruction

The results of our pilot study show that Japanese learners of English (at a higher intermediate level) did not greatly benefit from explicit article instruction on definiteness, specificity and genericity, though the learners did improve on their perception. There may be several factors to explain why the experimental group found definiteness, specificity and genericity difficult or confusing. These factors and what the implications of our study mean for article instruction are discussed in this section.

As previous studies (Trahey and White 1993; VanPatten and Cadierno 1993; White 1991) have shown, instruction can be of benefit to L2 learners. But, article instruction in comparison with the studies that have provided instruction in other areas of grammar is very complex. The learners in our study have likely never received such explicit instruction in article choice, so it may not be surprising that learners may have found the instruction too difficult for them as they are not highly advanced learners. In addition, the lessons on article choice may have caused confusion because for learners the difference between definite, indefinite and generic contexts is very subtle. Furthermore, each lesson was only 70 minutes long over the course of 3 weeks, which is not an adequate amount of instruction time, and each lesson was taught in English, the learners' L2 rather than their L1 (Japanese). If the upper intermediate learners had firstly been provided with instruction in Japanese, they might have had a better understanding of the concepts definiteness, specificity and genericity.

Despite no overall significant differences between the experimental and control groups, all learners in both groups are better at selecting the indefinite article for specific contexts, that is, [−definite, +specific], and worse at selecting the definite article for non-specific contexts, that is, [+definite, −specific] (see Figs. 9.2 and 9.3 above). Recall that Ionin et al. (2009) found in their study that Russian adult speakers are much better at selecting the indefinite article for [−definite, +specific] contexts arguing that they have access to semantic universals and domain-specific linguistic knowledge and make the specificity distinction with the indefinite article only. Our findings show that the Japanese L2 learners perform well at selecting the indefinite article for [−definite, +specific] contexts but less so with the definite article for [+definite, −specific] contexts. Based on these findings, we speculate that our Japanese learners, like Ionin et al.'s (2009) adult Russian speakers, rely on the use of explicit strategies, which overrides domain-specific linguistic knowledge.

What this means for instruction is that we should teach definiteness as important in English. Adult Japanese L2 learners may not need to be taught how the indefinite article can be used to refer to a specific referent in the discourse as they can access this semantic feature via UG, so there may not be a need to focus on [−definite, +specific] contexts as adult Japanese L2 learners will acquire this automatically. Though, clearly, at a higher intermediate level of English, learners still incorrectly choose the definite article for [−definite, +specific] contexts between 21 % (for instructed learners) and 33 % (for non-instructed learners) in our study. But, in comparison, both groups perform far worse at selecting the definite article for [+definite, −specific] contexts as both the experimental and control groups choose the indefinite article around 50 % or more.

One possible reason for L2 learners incorrectly selecting the indefinite article for [+definite, −specific] contexts could be the L2 learners' use of an explicit strategy based on specificity: this strategy would be 'use *a* when the speaker does not have a particular referent in mind' (Ionin et al. 2009). Learners apply the strategy when there is a lack of explicitly stated knowledge of the referent and as a result overextend the specificity distinction to definites. Similar explicit strategies to the one proposed by Ionin et al. (2009) are discussed in Goto-Butler's (2002) study. Therefore, instruction related to definiteness and specificity needs to focus on the use of the definite article, which can be used not only when the speaker explicitly states familiarity of the referent but also when the speaker explicitly denies knowledge of the referent because definiteness must always be marked with *the*. The results of the acceptability judgement task clearly show for both groups a high acceptance of the indefinite article and bare plurals for the sentence-level generics compared with acceptance of the definite article and bare plurals for the generic NPs. Learners may apply explicit knowledge to the task, basing their article selection on noun countability rather than genericness: Maybe generic *the* is more difficult because *the dinosaur* only refers to a single dinosaur in the learners' minds and cannot refer so easily to a group of individual dinosaurs; hence, the bare plural is easier as the plural clearly shows that one is referring to more than one dinosaur. This shows that instruction should refer to the difference between the indefinite generic sentence and the definite article generic sentence. The generic use of the indefinite article still retains the meaning of 'any *one*'. Indefinite article + singular noun cannot directly refer to species. This use is mostly used in a characterising or defining sentence (Cohen 2001). But the generic use of the definite article implies the prototype of the referent in question, that is, in the sentence '*the dog*…' choose several *dogs* from the set *dog* and identify the prototype of the selected dogs, which means that the generic use of the definite article implies plurality, contrary to the appearance. Definite article + singular noun can directly refer to well-established kinds such as species, for example, *the tiger*, having in mind the contrast with other species, for example, *the whale*. Learners need to have a good understanding of a 'kind' as it is difficult to define 'contrast with other species', which makes it difficult to use the definite article for generic NPs. What we learned is that we should not teach descriptively that the definite article can be used generically only in NP-level generics as it can also appear with sentence-level generics, for example, *The lion usually hunts alone*.

It is fair to say that article pedagogy is actually very complex – the semantics of definiteness and specificity is complex and, conceptually, genericity is too complex to reasonably teach in a short period of time. We can only add a couple of helpful generalisations to the current types of generalisations (limited to date to definiteness) generally found in English language textbooks.

Finally, we found some positive effects of instruction in perception. Learners were able to identify the articles in spoken utterances that they were unable to do before receiving the instruction. The implications are that L2 learners should receive instruction in perception, not only instruction in production, for example, pronunciation. Instruction provided on weak forms is especially helpful for EFL learners as many learners perhaps do not have many opportunities to listen to native speaker English, that is, pace, reduction of sounds, elision, linking, etc. Our results

show that article perception is teachable and that sufficient intake to the acquisition device might lead to improved article comprehension. What is clear from the results is that perception does not always reflect comprehension. A number of ways could be used to practise perception in the classroom which would be especially useful to those learners who lack the corresponding morphology in the L1.

9.7 Summary and Conclusion

Our pilot study investigated whether positive and negative input would help L2 learners in instructed article choice and perception. Since the study is a pilot study, we only had a small number of participants in the experimental and control groups, plus the length of instruction given to the learners was not long enough. However, despite the limitations, we found that our learners (like Ionin et al.'s 2009 learners) are able to make the specificity distinction with the indefinite article. In other words, learners can successfully select the indefinite article for specific and non-specific contexts without the need of instruction. But, learners resort to using an explicit strategy for definite non-specific contexts which leads them to incorrectly select the indefinite article. Instruction should focus on the use of the definite article in non-specific contexts. Finally, we showed that learners could benefit from instruction in the perception of articles.

We believe that because articles are a consistent area of difficulty for even advanced speakers of English, explicit instruction, whether it focuses on definiteness, specificity, genericity or perception, should be provided over a sustained period of time to help learners progress to more target-like performance in article choice and article production.

Acknowledgement This study has been supported by a Grant-in-Aid for Scientific Research (B, 21320078) from the Japan Society for the Promotion of Science to Noriaki Yusa.

Appendix[3]

Lesson 1. Uniqueness, Definiteness and Specificity

An important distinction in English is that *a* cannot be interpreted as definite in any context as in (1) and (2). ?? means it is odd:

(1) a. A man walked into the room. After thirty minutes *a man* left. **= indefinite**
b. *A man* is in the women's bathroom (but I haven't dared to go in there to see who it is). **= ??definite**

[3]Lesson 2 notes are not included in the Appendix, as the instruction provided in this lesson was on how to analyze sentences in Praat.

(2) a. *A man* just proposed to me in the orangery (though I'm much too embarrassed to tell you who it was). **= indefinite**
b. A man walked into the room. After thirty minutes *a man* left. **= ??definite**

The indefinite article *a* is specified as indefinite where the second use of the indefinite in (1a) and (2a) (*a man*) can be either specific or non-specific but it cannot be interpreted as definite as in (1b) as *a man* is a nonunique referent. Similarly, in example (2b), reference to *A man* cannot be indefinite if referring to the same individual.

(3) a. A man walked into the room. After thirty minutes *a man* left. **= ??indefinite**
b. A man walked into the room. After thirty minutes *the man* left. **= definite**

The opposite is true of the definite article *the*. In (3b) the definite *the man* links to the first indefinite *A man* because *the man* has been identified and is unique within the discourse. But, in (3a) indefinite *a* cannot function as an article marking someone being identified as unique. However, the definite article can also be non-specific:

(4) a. I'd like to talk to *a winner of today's race* – whoever that is; I'm writing a story about this race for the newspaper. **= ??indefinite**
b. I'd like to talk to *the winner of today's race* – whoever that is; I'm writing a story about this race for the newspaper. **= definite**

(5) a. I'd like to talk to *a winner of today's race* – she is my best friend! **= ??indefinite**
b. I'd like to talk to *the winner of today's race* – she is my best friend! **= definite**

The examples in (4b) and (5b) show that there is going to be a winner of the race and there can usually be only one *unique* winner. In (4b) the speaker does not know who the winner will be but knows that there will be a unique winner (the person who comes first) and in (5b) the speaker refers to a particular individual in the race who is her best friend.

Think about example (6) below:

(6) Mary's gone for a spin in **the car she just bought**. **= definite**

In (6) the hearer does not know the car. He/she cannot describe the car unless the hearer saw the car. The definite article in (6) shows there is only one car that is being described. It means that Mary bought only *one* car. What about example (7):

(7) Mary's gone for a spin in **a car she just bought**. **= indefinite**

In (7) we have an indefinite article. But, we could be talking about one car or it is possible Mary bought more than one car.

Lesson 3. Generics

All generics look the same:

(1) a. An elephant never forgets.

b. The elephant never forgets.
c. Elephants never forget.

What about the examples in 2?

(2) a. The sunflower *blooms* in spring. [generic]
b. The sunflower *bloomed* in spring. [nongeneric]
c. The tiger *eats* small animals. [generic]
d. The tiger *has eaten* small animals. [nongeneric]
e. The fox *hunts* rabbits. [generic]
f. The fox *is hunting* rabbits. [nongeneric]

If the verb is in the present tense, then it is possible to get a generic reading of the sentence. So, in 2. a, c and e, we get generic readings. But if the verb is in a different tense, we cannot get a generic reading as in examples 2. b, d and f. Example 2. b is past tense, 2. d is present perfect tense, and 2. f is present continuous tense.

Genericity: NP Level

– A well-defined kind is established.
– The target sentence contains a kind predicate.
– Bare plurals and the definite article can be used.

Think about example 3:

(3) a. The potato was first cultivated in South America.
b. Potatoes were introduced into Ireland by the end of the 17th century.

We call NPs like *the potato* in 3. a or *potatoes* in 3. b **generic NPs**. The underlined NPs in 3. do not refer to particular or specific potatoes but rather a group of potatoes in general. It does not refer to an 'ordinary' individual or object.

Certain types of verbs such as *die out*, *extinct*, *invent* and *widespread* are only used with the definite article. See examples in 4:

(4) a. The lion will become extinct soon.
b. Lions will become extinct soon.
c. *A lion will become extinct soon.
d. A lion will become extinct soon (means a certain type of lion).

Genericity: Sentence Level

– The kind is not well defined.
– The target sentence is characterising.
– Bare plurals and the indefinite article can be used.

Generic sentences report a general property. In the examples in 5. and 6. the sentences express a general property about *potatoes*, *beavers* and *lions*:

(5) a. A potato contains vitamin C, amino acids, protein and thiamine.
b. Potatoes contain vitamin C, amino acids, protein and thiamine.

(6) a. A beaver builds dams.
b. Beavers build dams.
c. A lion has a bushy tail.
d. Lions have bushy tails.

References

Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad, and Edward Finegan. 1999. *Longman grammar of spoken and written English*. London: Longman.

Bley-Vroman, Robert. 1990. The logical problem of foreign language learning. *Linguistic Analysis* 20: 3–49.

Boersma, Paul, and David Weenink. 2006. *Praat: doing phonetics by computer (Version 4.5.05)* [Computer program]. Retrieved November 5, 2006 from www.praat.org.

Chomsky, Noam. 1981. Principles and parameters in syntactic theory. In *Explanations in linguistics*, ed. Norbert Hornstein and David Lightfoot. London: Longman.

Cohen, Ariel. 2001. On the generic use of indefinite singulars. *Journal of Semantics* 18: 183–209.

Dulay, Heidi C., and Marina K. Burt. 1974. Natural sequences in child second language acquisition. *Language Learning* 24: 37–53.

Fodor, Janet, and Ivan Sag. 1982. Referential and quantificational indefinites. *Linguistics and Philosophy* 5: 355–398.

Fuli, Lotu Titi. 2007. *Definiteness vs. specificity: An investigation into the terms used to describe articles in Gagana Samoa*. Master's thesis, University of Auckland.

García Mayo, María del Pilar, and Roger Hawkins (eds.). 2009. *Second language acquisition of articles: Empirical findings and theoretical implications*. Amsterdam/Philadelphia: John Benjamins.

Goto-Butler, Yuko. 2002. Second language learners' theories on the use of English articles: An analysis of the metalinguistic knowledge used by Japanese students in acquiring the English article system. *Studies in Second Language Acquisition* 24: 451–481.

Heim, Irene. 1991. Articles and definiteness. In *Semantics: An international handbook of contemporary research*, ed. Arnim von Stechow and Dieter Wunderlich, 487–535. Berlin: W. de Gruyter.

Ionin, Tania, Heejeong Ko, and Kenneth Wexler. 2004. Article semantics in L2 acquisition: the role of specificity. *Language Acquisition* 12: 3–69.

Ionin, Tania, Maria Luisa Zubizarreta, and Vadim Philippov. 2009. Acquisition of article semantics by child and adult L2-English learners. *Bilingualism: Language and Cognition* 12: 337–361.

Ionin, Tania, Silvina Montrul, Ji-Hye Kim, and Vadim Philippov. 2011. Genericity distinctions and the interpretation of determiners in L2 acquisition. *Language Acquisition* 18: 242–280.

Izumi, Shinichi, and Usha Lakshmanan. 1998. Learnability, negative evidence and the L2 acquisition of the English passive. *Second Language Research* 14: 62–101.

Krashen, Steven. 1985. *The input hypothesis: Issues and implications*. London: Longman.

Krifka, Manfred, Francis Pelletier, Gregory Carlson, Alice ter Meulen, Godehard Link, and Gennaro Chierchia. 1995. Genericity: An introduction. In *The generic book*, ed. Gregory Carlson and Francis Pelletier, 1–125. Chicago: University of Chicago Press.

Krol-Markefka, Agnieszka. 2008. The role of explicit rule presentation in teaching English articles to Polish learners. In *Morphosyntactic issues in second language acquisition*, ed. Danuta Gabry-Barker, 177–186. Clevedon: Multilingual Matters.

Master, Peter. 1987. *A cross-linguistic interlanguage analysis of the acquisition of the English article system.* PhD dissertation, UCLA.

Master, Peter. 1990. Teaching the English articles as a binary system. *TESOL Quarterly* 24: 461–478.

Master, Peter. 1995. Consciousness raising and article pedagogy. In *Academic writing in a second language*, ed. Diane Belcher and George Braine, 183–204. Norword: Ablex.

Pica, Teresa. 1983. The article in American English: What the textbooks don't tell us. In *Sociolinguistics and language acquisition*, ed. Nessa Wolfson and Elliot Judd, 222–233. Rowley: Newbury House.

Pierce, Lisa, and Tania Ionin. 2011. Perception of articles in L2 English. In *Selected proceedings of the 2009 Second Language Research Forum*, ed. Luke Plonsky and Maren Schierloh, 121–128. Somerville: Cascadilla Proceedings Project.

Schwartz, Bonnie. 1993. On explicit and negative data effecting and affecting competence and 'linguistic behavior'. *Studies in Second Language Acquisition* 15: 147–163.

Schwartz, Bonnie, and Magda Gubala-Ryzak. 1992. Learnability and grammar reorganisation in L2A: Against negative evidence causing the unlearning of verb movement. *Second Language Research* 8: 1–38.

Sudo, Michiko Mochizuki, and Ikuyo Kaneko. 2005. Acquisition process of English rhythmic patterns: Comparison between native speakers of English and Japanese junior high school students. *JACET Bulletin* 40: 1–14.

Trahey, Martha. 1996. Positive evidence in second language acquisition: some long term effects. *Second Language Research* 12: 111–139.

Trahey, Martha, and Lydia White. 1993. Positive evidence and preemption in the second language classroom. *Studies in Second Language Acquisition* 15: 181–204.

Trenkic, Danjela. 2008. The representation of English articles in second language grammars: determiners or adjectives? *Bilingualism: Language and Cognition* 11: 1–18.

VanPatten, Bill, and Teresa Cadierno. 1993. Explicit instruction and input processing. *Studies in Second Language Acquisition* 15: 225–241.

White, Lydia. 1991. Adverb placement in second language acquisition: Some effects of positive and negative evidence in the classroom. *Second Language Research* 70: 133–161.

White, Benjamin. 2010. *In search of systematicity: A conceptual framework for the English article system*. PhD dissertation, Michigan State University.

Wilson, Ian. 2008. Using Praat and Moodle for teaching segmental and suprasegmental pronunciation. In *Proceedings of the 3rd international WorldCALL Conference: Using Technologies for Language Learning (WorldCALL 2008)*, 112–115. Fukuoka, Japan.

Yusa, Noriaki, Masatoshi Koizumi, Jungho Kim, Naoki Kimura, Shinya Uchida, Satoru Yokoyama, Naoki Miura, Ryuta Kawashima, and Hiroko Hagiwara. 2011. Second-language instinct and instruction effects: Nature and nurture in second-language acquisition. *Journal of Cognitive Neuroscience* 23: 2716–2730.

Part III
GenSLA, the Language Classroom, and Beyond

Chapter 10
Whether to Teach and How to Teach Complex Linguistic Structures in a Second Language

Roumyana Slabakova and María del Pilar García Mayo

10.1 Introduction

In the past decade, linguistic research on second language acquisition has been inspired by a search to identify principled, not ad hoc or post-factum, explanations of this many-faceted cognitive process. In the 1990s, the debate on the initial state of second language (L2) acquisition took center stage, but after 2000, emphasis shifted to identifying sources of errors and diverging L2 representations. In this search for principled explanations, the relative difficulty or ease of acquisition of various properties has received heightened attention. If we can explain why L2 learners have a persistent difficulty with some linguistic properties for which there is abundant evidence in the input to learners, but have no trouble with some other properties that are really subtle and are supported by very little to no evidence in the input, we would be on our way to explaining the language acquisition process as well as making suggestions to instructional practice. We believe generative linguistic theory can offer valuable insights contributing to this goal.

This research direction is not new, of course, and efforts to isolate factors which make some grammatical structures more difficult to learn than others have been proposed ever since the morpheme studies (Bailey et al. 1974; Dulay and Burt 1973, 1974). More recently, DeKeyser (2005) (see also Goldschneider and DeKeyser 2001) identified three factors that make a linguistic sign difficult: complexity of form, complexity of meaning, and complexity of form–meaning relationship.

R. Slabakova (✉)
Department of Linguistics, University of Iowa, Iowa City, IA, USA

IKERBASQUE Basque Foundation for Science
e-mail: roumyana-slabakova@uiowa.edu

M.P. García Mayo
Department of English Studies, University of the Basque Country (UPV/EHU), Vitoria-Gasteiz, Spain
e-mail: mariapilar.garciamayo@ehu.es

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_10,

Additional factors were classified under the latter relationship: saliency, opacity, frequency, redundancy, etc. Collins et al. (2009) argued that type frequency, semantic scope, and perceptual salience were factors that reliably distinguished the early acquired *-ing* from the later acquired *-ed* and *his/her* morphemes. Ellis (2006) investigated linguistic difficulty with reference to the distinction between implicit and explicit knowledge of a second language. Using a battery of tests designed to measure implicit and explicit knowledge of seventeen grammatical structures, the study showed that structures that were easy in terms of implicit knowledge were often difficult in terms of explicit knowledge and sometimes vice versa, without a correlation between the two types of knowledge.

However, most research to date has been focusing on the acquisition of inflectional morphology. In this chapter, we will be interested in the acquisition of complex meanings, their comprehension at a basic literal level, and then on another level of pragmatic appropriateness. In this sense, our research focus expands the current discussion of ease or difficulty of acquisition into the realm of meanings, while retaining its application to the language classroom.

If we base our explanations of difficulty on linguistic theory, talking about complexity of meaning, one of DeKeyser's (2005) factors impacting difficulty of acquisition, namely, complexity of meaning, should be reconsidered. Current views of language architecture assume that meanings are universal, in the sense that all languages are capable of expressing every meaning (the emphasis being on grammatical meaning, not lexical meaning)[1] (Jackendoff 2002). The differences among languages stem from different mappings between the grammatical concepts and the way languages mark them. For example, topic (old information, known to the speaker and hearer) and focus (new information) are marked by intonation in some languages, by certain morphemes and word order changes in others and a combination of both in still others. Some languages also leave them unmarked and rely on the discourse context to provide that information. However, the grammatical meanings of topic and focus are the same across all languages.

In this chapter, we will take the example of a relatively complex but universal meaning, that of scalar implicature (to be defined in Section 10.2). Scalar implicature has been the topic of much research in linguistic theory and in first language (L1) acquisition, yet it is not discussed in the L2 pedagogical literature, despite being vitally important for efficient human communication. It is part of the lexical meaning of the indefinite pronoun *some* and other indefinite pronominal morphemes, but it also depends on the linguistic context. In this sense, the topic of this chapter does not strictly pertain to generative syntax but falls largely within the areas of semantics and pragmatics and their interface. There are generative (neo-Gricean) accounts

[1] A *universal* meaning is one expressed in all natural languages. A *grammatical*, or *functional*, meaning can be captured by functional morphemes (e.g., plural *-s*, past tense *-ed*) or through word order (SVO, OSV, etc.). *Lexical* meaning is the idiosyncratic meaning of each word, pointing to its denotation in the outside world. Both lexical and grammatical meanings can be universal. It is our contention here that all grammatical meanings are truly universal in the sense that they have to be expressed in every language, in one way or another.

of scalar implicatures (e.g., Chierchia et al. 2001; Reinhart 2006) as well as accounts based on other theoretical approaches, for example, Relevance Theory (Sperber and Wilson 1986/1995). Whatever the right analysis of this construction may be, it is generative L2 researchers who have brought implicature acquisition to bear on the issues of universal semantic and pragmatic meanings interacting with cognitive and processing complexity. In this way, generative L2 research is opening up the field by bringing into the limelight and into the classroom previously undiscussed linguistic properties and relevant new research questions.

In the first part of the chapter, following exposition of our assumptions about semantic and pragmatic knowledge, we will examine L1 and L2 knowledge of scalar implicature in simple as well as in more complex sentences. We will show that since the meaning is universal, it does not need to be taught in language classrooms for the basic knowledge of this construction to become part of interlanguage grammar. However, we will argue that the correct interpretation of this construction depends on processing resources, for native speakers and second language speakers alike. It is for this reason that we suggest that the construction has to be practiced in classrooms, in order to facilitate the relevant processing. Therefore, in the second part of the chapter, we suggest some ideas, drawing on techniques from L2 acquisition research that can be used as the basis for tasks that could ensure second language learners are aware of and can process this linguistic construction.

10.2 On the Distinction Between Semantics and Pragmatics

Explanations within generative second language acquisition are based on an independently provided property theory, generative linguistic theory, and use distinctions falling out of the language architecture. In this section, we will spell out our assumptions about the language architecture and elucidate semantic and pragmatic meanings, as well as look at what predictions for acquisition obtain. We will assume a language architecture like the one exemplified in Fig. 10.1 below, adapted from Reinhart (2006).

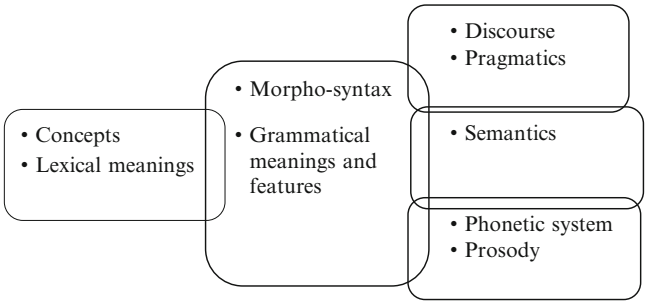


Fig. 10.1 Modular design of the language faculty, following Reinhart (2006)

The central modules of the language architecture are (at least) the five modules illustrated in the boxes in Fig. 10.1, and overlap between the boxes represents the interfaces between modules. We will be most interested in the transition from the morpho-syntax box to the two meaning boxes, discourse pragmatics and semantics. While the exact relationship between the discourse and the semantics modules is still debated, many researchers acknowledge that it is useful to distinguish between the two types of meaning. Fairly uncontroversially, syntactic structure needs to be correlated with semantic structure for a form–meaning mapping; however, this correlation is not always trivial (Jackendoff 2002). The syntactic processor works with objects like syntactic trees, their constituents, and relations: noun phrases, verb phrases, grammatical features, etc. The semantic processor operates with events and states, agents and patients, individuals, and propositions. For example, in the sentence *The girl ate the apple*, *the girl* is a noun phrase in subject position in the syntax but an agent in the semantics. The operations at the interface are limited precisely to those structures that need to be correlated, and they do not see other structures and operations (like case marking) that would have no relevance to the other module. The semantic meaning of a sentence is compositional: it is made up of the (lexical) meanings of the component words and features, for example, *the, girl, the apple, eat,* [past]), taking into account their constituent order. For many researchers (e.g., Reinhart 2006), discourse–pragmatic meaning is on another level, being calculated after semantic meaning and taking context into account. López (2009) is a recent theoretical proposal, which argues for the separation of discourse and pragmatics in two different modules and shows how pragmatics feeds into discursive information. The calculation of discourse–pragmatic meaning is almost certainly *more complex* than calculating only semantic meaning. In this chapter, we will use "logical" meaning for the more basic semantic calculation and "pragmatic" meaning for the added calculation of context resulting in discourse representation structures.

Let us now discuss the linguistic pragmatic meaning of conversational and scalar implicatures as regulated by Grice's maxims (Grice 1969, 1989). This is a linguistic phenomenon related to speech acts in the sense that both implicatures and speech acts capture the ability of the hearer to recognize the additional meaning and intention encoded in a speaker's utterance. While speech acts are more often culturally acceptable conventions and rules of speaking, conversational implicature refers to the universal ability to recognize the speaker's underlying intention over and above the compositional semantic meaning of the utterance. If one hears the sentence in (1), one frequently understands that (2) is the intended message, and not (3).

1. Some professors are smart.
2. Not all professors are smart.
3. (All) professors are smart.

Logically speaking, *some* means *some and possibly all.* Pragmatically speaking, however, *some* means *not all*. The hearer gets this inference because if the speaker really meant "some and possibly all professors are smart," she would have uttered something along the lines of (3). Since the speaker did not do that, the implication is that the real meaning is "not all professors are smart." Comprehension of implied

meaning may or may not be culturally determined, but it is cognitively determined (Noveck and Reboul 2008), and it is regulated by a universal cognitive mechanism described by Grice (1969) as the Maxim of Quantity.

4. Maxim of Quantity
   I. Make your contribution as informative as is required.
   II. Do not make your contribution more informative than is required.

Lexical items like quantifiers have relative informational strength: <*some, most, all*> and constitute a scale. That is why the added assumption in *Some professors are smart* is called a conversational implicature and, more specifically, a scalar implicature (Horn 1972).

Conversational implicature is purportedly part of human language, and all languages should exhibit a similar process of implied meaning inferencing. Therefore, the issue of transfer from the native language plays out in an interesting way in this area of linguistic pragmatics. The mechanisms of scalar implicature computation, whatever they are, can readily be transferred from the native language of the learner.

10.3 Second Language Acquisition of Implicatures

For many L2 researchers, comprehension of implied meaning is a speech act among many others. However, literal and intended meaning interpretation is a linguistic computation much wider in application: it is part of almost any communication. Therefore, implied meaning has been studied from many different perspectives. We shall mention some representative studies of implicature below. A pioneering series of studies on knowledge of conventional implicature in L2 English speakers was Bouton (1988, 1994). Initially based on a cross-sectional picture, the studies followed the development of several types of conversational implicature such as relevance and implied criticism. Bouton tested two groups of participants after 17 months and after 54 months in the USA. Results suggested that participants were capable of computing implicature even at the earlier testing stage; they performed truly native-like on all types of implicatures at the second testing. The only area of uncertainty and difficulty remained "specific points of American culture and not the type of implicature involved" (Bouton 1994: 163). Another conclusion was that implicature is a cognitive process distinct from cultural knowledge and its acquisition benefits from instruction and longer exposure to the target language.

Recently, Röver (2005) investigated the effect of the learning environment, either in the target language country or in the native language country. The study tested English as a second language (ESL) and English as a foreign language (EFL) participants on comprehension of two types of implicatures: formulaic implicatures, for example, indicating agreement by saying *Is the Pope Catholic?* and conversational implicatures that had to be computed online without the benefit of conventional expressions (e.g., Jack: *Do you know where Frank is, Sarah?* Sarah: *Well, I heard music from his room earlier*). Results revealed no effect of exposure (study

abroad) on the participants' comprehension of implicatures but a significant proficiency effect. Taguchi (2008) examined the comprehension speed and accuracy of Japanese ESL and EFL learners. She employed a pragmatic listening task with indirect refusals and indirect opinions, and she administered it twice: before and after a 5–7-week period of intensive English instruction. Results indicate that both learning groups improved in speed and accuracy, suggesting that the learning environment does not have a decisive effect on interlanguage pragmatics. In other words, even a foreign language classroom affords sufficient input for the learners to make decisive gains in pragmalinguistic competence.

In summary, while there is little research directly on scalar implicatures (but see below), some L2 research on speech acts touches on universal calculations of implied knowledge (but see Siegal et al. 2009 below). Participants' results suggest that while proficiency in the second language is important, even relatively short or restricted exposure to the language can trigger this type of knowledge. Context of acquisition (e.g., study abroad) does not have a decisive effect on implicature comprehension. These findings are compatible with the universal nature of implicature calculation.

10.4 How Do Children Acquire Pragmatic Scales?

We cannot do justice to the large literature on native and child scalar implicature calculation here. However, we are interested in the findings of this wide-ranging research because it informs the research questions we can ask about adult L2 acquisition. Recent experimental investigations into children's interpretations of scalar terms (Chierchia et al. 2001; Musolino and Lidz 2006; Noveck 2001) have concluded that preschool children and even children 8–10 years old are often insensitive to these implicational meanings. They treat the weaker term in the scale *logically,* without being aware of its pragmatic potential and message. A central question of child acquisition research is whether scalar implicature computation development depends on the maturation of some cognitive capacity or on processing abilities. If it depends on the maturation of some cognitive capacity in children, we would expect adult L2 learners to be much better than children. Not only are they cognitively mature individuals, but their native language is in a position to assist them in inference calculation. If, on the other hand, scalar implicature computation depends on processing capacity,[2] we could expect adult L2 learners to have more difficulty than adult and possibly even young native speakers. We will come to this question in the next section.

[2]When we talk about "processing capacity/resources," we implicate the ability of a speaker to maintain a certain linguistic structure in short-term memory and consider all factors relevant to its interpretation, until the final computation of the meaning is accomplished. Structures that rely on the extralinguistic context in order to be interpreted correctly, as well as long or grammatically complex structures, are considered computationally more complex than those that are shorter, simpler, and do not rely on context.

The added dimension of bilingual language processing also plays out in an interesting way when looking at the acquisition of this property. Siegal et al. (2009) tested 3–6-year-old children, bilingual in Italian and Slovenian or monolingual in either language, on a conversational violations test to find out whether they would obey Gricean maxims. On a laptop, children were shown short conversational exchanges involving three dolls. One doll asked a question, the other two provided alternative responses: one violating a maxim and the other pragmatically felicitous. Children were asked to point to the doll that said something "silly" or "rude." Results of both experiments in Siegal et al. (2009) (which follow the same procedure but have different participants) show that there is a definite advantage of the bilingual children over the monolingual ones. Bilingual children were more accurate in choosing nonredundant answers, true answers over false ones, answers that were relevant to the questions, and polite answers over rude ones. The only maxim on which all the children performed equally well and hovered at around 60 % pragmatic responses was the Maxim of Quantity I (see (4)). For example, children had to consider the underinformative answer to a question as in (5) from Siegal et al. (2009: 116) and to reject it as not appropriate:

5. Question: What did you get for your birthday?
   Underinformative answer: A present.
   Appropriate answer: A bicycle.

As the reader can ascertain, these test items are very close in meaning to the scalar implicature in *Some giraffes have long necks* (see the next section for more examples). Both the underinformative answer in (5) and the scalar implicature with *some* are logically true, but there is a better answer with more concrete information to be offered and a choice to be made between the two. Results of 60 % pragmatic answers for children before the age of six are largely in line with other studies in the literature on scalar implicature computation. More importantly, however, Siegal et al. (2009) did not establish an advantage for bilingual children comprehending underinformative sentences. It is possible that comprehending underinformative sentences involves different semantic–pragmatic calculations than detecting relevance and rudeness. We will come back to these findings after we discuss two recent experiments on scalar implicature computation in adult L2 speakers.

10.5 Two Studies on L2 Acquisition of Scalar Implicatures

10.5.1 Slabakova (2010)

Slabakova (2010) studied the L2 acquisition of scalar implicatures by Korean native learners of English. In one experiment, the participants had to judge the felicity of underinformative sentences as in (6) without context and had to say whether they agree with the statement.

6. Some elephants have trunks.

A "Yes" answer represents the logical option since *some* and indeed *all* elephants have trunks. However, the sentence is pragmatically infelicitous in that it is not maximally informative; "No" is the pragmatic answer. The test sentences were translated into Korean and administered to Korean native speakers, as well as to English natives in English. Slabakova found differences in the Korean speakers' performance in their native and in their second language. They gave around 40 % pragmatic answers in their native language (not significantly different from the English native group) and about 60 % pragmatic answers in their second language. The results suggest that L2 learners have no problem computing scalar implicatures; indeed they do so more often than native speakers.[3] In a second experiment with added context, the learners gave pragmatic answers over 90 % of the time.

Another interesting finding of this experiment comes from the individual results. Group means of 40–60 % can hide a lot of individual variation. It turned out that native speakers as well as second language speakers divided into two groups: participants who were logical in most of their answers and participants who were pragmatic in most of their choices. There were very few people who were not clearly in one of these two groups.

Slabakova argued that the difference between native and second language speakers is due to processing resources. The logical responses are arguably due to conjuring up alternative contexts in order to agree with the logical use of *some.* For example, a speaker interpreting (6) may reason that only some elephants have trunks because some others may have been injured or born without trunks (Guasti et al. 2005). Some of Slabakova's native speaker participants actually articulated this view. However, some speakers may have a harder time coming up with these alternative contexts, because these added calculations use up more processing resources, which are always in shorter supply in a second language. That would explain the 20 % difference between pragmatic and logical answers in the Korean speakers' L2 English and native Korean judgments.

10.5.2 Lieberman (2008, 2009)

Lieberman (2008, 2009) is a follow-up on Slabakova (2010), focusing on the issue of processing resources. Lieberman was intrigued by Slabakova's explanation of her findings and set up his experimental study to test this hypothesis. The study

[3]If adult L2 learners are better at pragmatic interpretation than young children (see Section 10.4), there is an apparent contradiction between these results and the child acquisition findings. It is possible that different parts of the processing routines present different problems to children and adults. Reinhart (2006) argues that scalar implicatures are difficult for children because they involve comparing two alternative derivations (what she calls "reference set computation"), and that may not be so difficult for adults. More research is needed addressing this issue.

tested the acceptance of computationally demanding implicatures as in (7a) and compared them to less demanding sentences as in (7b).

7. a. Max didn't read all of the books.
   b. Max read some of the books.

A sentence such as (7a) involves an indirect implicature because of a scale reversal and is harder to process than the direct implicature in (7b), even for native speakers (Gillingham 2007). Japanese native speakers of English were tested on the scales <*sometimes, always*>, <*partly, completely*>, as well as *every* in the scope of negation. When forced to judge the acceptability of single test sentences in short contexts (e.g., (8); see more examples in Section 10.7.), native speakers had more difficulty computing the indirect implicatures compared to the direct one.

8. George is a music teacher. He gets very annoyed by students' lateness to rehearsal. If his students show up late, he cancels his class.
   When students show up late, George sometimes cancels class.

The nonnative speakers were even less accurate than the natives, suggesting that in these cases there is indeed a processing problem and the native vs. nonnative differences are a matter of degree. When the processing load was reduced by presenting the participants with two alternatives, one felicitous and one infelicitous, the nonnative speakers had no trouble with the task and performed similarly to the native speakers. Neither in Slabakova (2010) nor in Lieberman (2008) was proficiency a factor in the learners' performance. At first glance, this seems contradictory to the findings of the literature summarized in Section 10.3. However, we remind the reader that, in those studies, the implied meaning was calculated in conventional and non-conventional expressions embedded in dialogs. That calculation is contingent on syntactic and semantic comprehension; hence, pragmatic comprehension was found to depend on proficiency. In contrast, the scalar implicatures in Slabakova (2010) were tested in very simple sentences with no context. We have argued here that scalar implicature items are linguistically easy, their computation depending on correctly using the pragmatic meaning of the words *some* and *all*, which are relatively early lexical acquisitions. This fact alone may explain the discrepancy.

To summarize, the findings of Slabakova (2010) and Lieberman (2008, 2009) together suggest that when universal computation mechanisms are at play, learners have no trouble comprehending them. However, processing difficulty interferes with comprehension and affects learners more than natives. If we consider these findings in the light of the findings for monolingual and bilingual children (Section 10.4), the same underlying factor presents itself: processing resources. However, processing resources are not a given throughout the lifetime: children have less of them and when they mature and become adults, they have more. Constructions harder to process may still take a toll reflected in reduced accuracy but nothing that a little practice cannot improve. The next question we will consider is the issue of practicing.

10.6 Native Speakers Practicing Grammar?

It has been widely established that second language learners benefit from practice (DeKeyser 2007a). Research has documented that practice of various second language constructions improves the ease with which they are processed because it increases the automatization of the structure and meaning computation (Segalowitz 2010; VanPatten 2004, 2012).[4] In this section, we will argue (somewhat unorthodoxly) for the necessity of practice on the basis of some findings from native speaker performance. In the literature on individual differences and on language processing, it has become accepted to speak of proficient and non-proficient native speakers (e.g., Pakulak and Neville 2009). Very often, the latter are low academic achievement individuals who have not had much practice in reading and writing. Non-proficient native speakers process language without paying attention to the morphological endings of words but instead rely on subject–verb–object templates, knowledge of the world, and context. Such processing is called "shallow processing" (Clahsen and Felser 2006), "good-enough" processing (Ferreira 2003; Ferreira et al. 2002), or a "pseudoparse" (Townsend and Bever 2001) in the psycholinguistic literature.[5] We shall summarize very recent research here to show that even non-proficient native speakers who initially demonstrated low accuracy on two lower-frequency constructions improved with language training.

Street and Dąbrowska (2010) tested comprehension of passives and quantifiers in sentences with *is* or *has* as in the examples below:

9. The soldier hit the sailor.
10. The sailor was hit by the soldier.
11. Every dog is in a basket.
12. Every basket has a dog in it.

Participants had to select the picture, one out of two, which correctly illustrated the content of the test sentence. Participants were divided into high and low academic achievement groups. The results showed that the low academic achievement participants ($n=54$) reached average accuracy of 79 % on passives, 71 % on quantifiers with *is*, and 53 % on quantifiers with *has.*

However, after a brief nontechnical explanation of one of the tested constructions and minimal practice, participants brought their accuracy scores up to 100 %. The construction that was not explained and practiced did not improve. The accuracy gains persisted 6 months after the training. These experimental findings suggest that even native speakers can benefit from practice on a construction that is hard for the individual to process (in this case specific, lower-frequency constructions). They also suggest that processing difficulties and consistent exposure to a construction affect speakers' performance.

[4] We are very grateful to Robert DeKeyser for discussing this issue with us.

[5] Note that (as Street and Dąbrowska 2010 point out) such processing need not be incompatible with a generative approach to language acquisition.

10.7 Broad Pedagogical Implications

On the basis of the studies reviewed above, it seems that processing difficulties affect participants' performance; that is, native–nonnative differences in processing are a matter of degree. Findings suggest that when universal computation mechanisms are at play, learners have no trouble comprehending them. However, processing difficulty interferes with comprehension and affects learners more than native speakers of a language.

Street and Dąbrowska's findings (2010) point to the effectiveness of some type of practice for native speakers, at least for the two aspects that were tested in their study (passive sentences and quantifiers). If that practice was effective for native speakers, L2 learners would arguably benefit from it too. In fact, some researchers have already argued for the need of some kind of practice for the development of pragmatic competence (Bardovi-Harlig and Dörnyei 1998; Bardovi-Harlig and Hartford 1996; Takimoto 2006).

The notion of practice and its importance has been brought back to the spotlight in debates in the second language acquisition (SLA) field (cf. DeKeyser 2007a, b, c). DeKeyser (2007b: 1) defines practice as "[…] specific activities in the second language, engaged in systematically, deliberately, with the goal of developing knowledge of and skills in the second language" and argues for a reconsideration of the notion in the second language learning arena, as issues of practice in this area are vastly under-researched. DeKeyser (2010: 157) states that "[…] with increased practice and proficiency, it is not just linguistic representations that change, but also the skills for using them (Kroll and Linck 2007)."

One of the approaches that has emphasized the importance of practice activities in the process of second language learning is the focus-on-form (FonF) approach (Doughty and Williams 1998; Long 1996; Nassaji and Simard 2010), an instructional option that calls for an integration of grammar and communication in L2 teaching (Nassaji and Fotos 2011: 1). It is probably worth considering its basic tenets before suggesting some ideas about how to teach conversational implicatures in the language classroom.

The FonF approach is based on the assumption that comprehensible input, though necessary for acquisition, is insufficient for acquiring the L2 grammar. One of the arguments that led to an increasing importance in the focus on formal aspects of language is the large body of research carried out in French Canadian immersion programs by Merrill Swain and colleagues (Harley and Swain 1984; Swain 1985 *et passim*). Several studies showed that simply being exposed to rich and meaningful input fell short of developing high levels of grammatical accuracy in the learners (Swain and Lapkin 1982). It is when learners are exposed to formal issues that their awareness of those forms might be lasting because difficult features are made salient and become possible candidates for further processing (VanPatten 1990). Their accuracy might also improve (Spada 2011). Another argument comes from research that has shown that learners experience difficulty attending to both form and meaning at the same time (VanPatten 1990) and, therefore, teachers should find ways to attract their attention to those forms. In fact, Simard and Jean (2011) carried out a

descriptive observational study in ESL and French as a second language (FSL) classrooms in Canada among teachers in high schools of the Montreal region and showed that both the ESL and the FSL teachers of their sample used form-focused instruction interventions 35 % of the class time on average.

As most good language teachers know, when designing tasks for the language classroom, they need to adapt them considering audience and context. Thus, one of the most important variables that teachers have to take into account is the age of the learners. In that sense, teachers should consider research that focuses on age-related pedagogical strategies. As Muñoz (2007: 230ff) points out, there are important differences between children and adults regarding their cognitive development, their aptitude, and their age-related styles that need to be taken into account when teaching them. Thus, if one considers the learners' cognitive development, it would seem realistic that, in the case of children, one would design activities that encourage their physically doing things in the classroom and carrying out simple actions framed in a game format (Cameron 2001). Teachers should make use of toys or props children are familiar with (e.g., popular cartoon characters) so that they can really engage in the different activities. Work designed for children should use chunks and routines that would allow them to scaffold their discourse. Older learners, on the contrary, may be more attracted by activities that foster their logical reasoning and their metalinguistic awareness (cf. Tragant and Victori 2006 for strategies used by EFL learners).

Recent work has shown that form-focused activities are appropriate even for young learners. Thus, Bouffard and Sarkar (2008) show that pedagogical techniques can be devised enabling children as young as 8 to develop metalinguistic awareness in their L2 (French). The 49 youngsters participating in their study were prompted by the teacher-researcher to correct their own non-target-like utterances. They watched videotapes of their oral performance and were guided to notice and repair errors through group discussion. The findings of the study showed that young children were actually able to notice and repair their errors and to identify problematic language features. Bouffard and Sarkar show that a teacher can train young learners how to draw on their grammatical knowledge to build their developing L2. Shak and Gardner (2008) carried out another interesting study with young children. They investigated the attitudes of 78 nine-year-old children toward four FonF task-types (consciousness-raising, dictogloss, grammar interpretation, and grammaring). The findings show that form-focused tasks can be embedded in a communicative language-teaching context and that their use is perceived as effective by the children. Form-focused tasks were seen as facilitators of children's L2 development.

In the light of these promising research findings, L2 teachers could consider adapting some data-collection techniques used in L2 research studies to devise classroom activities. In fact, this is basically what Fortune (2010) suggests should be done, having research-based and practitioner-informed responses, to quote part of the title of her book. Specifically, in the case under discussion in this chapter, namely, conversational implicatures, teachers can adopt a version of the truth value judgment tasks (TVJT, Crain and Thornton 1998). This task would involve two teachers, or a teacher and an assistant, in the classroom. One of them (the storyteller) acts out short stories

with toys, puppets, and props the children are familiar with while the other teacher provides the voice of the puppet watching the story together with the children. At the end of the story, the puppet tells the child what he thinks happened in the story. The child's job is to tell the puppet whether he is right or wrong. Musolino and Lidz (2006) used this task in an experimental study with children of age 5 years and 4 months; the same activity can be used in a classroom to gauge the extent to which young children are aware of conversational implicatures. In fact, anyone interested in seeing how this task can be implemented in a research setting can access the following link: http://ling.umd.edu/labs/acquisition/?page=methods, where researchers at the University of Maryland can be seen interacting with children (see technique number 4). This research task can be easily operationalized in the language classroom, as children will happily engage in interaction with puppets they are familiar with. Our suggestion is that the same technique can be used for testing as well as teaching.

Regarding adolescents and adult learners, their greater cognitive abilities would allow teachers to offer them more challenging tasks in order to draw their attention to this particular semantic–pragmatic phenomenon. The TVJT can also be used with this group of learners but this time providing a context previous to the judgment by the learners of the appropriateness of several sentences relative to the context offered. For example, in the study by Lieberman (2008) referred to above, he used a TVJT of that type because he argued that asking the participants in his study (14 L1 Japanese/L2 English speakers and 20 monolingual native English speakers) "[…] to judge appropriateness will allow us to see whether the implicature is computed and used for interpretation." Consider the contexts he provides for the scales <*sometimes, always*> (e.g., (13), previously presented as (8), and (14)) and <*partly, completely*> (e.g., (15) and (16)):

13. George is a music teacher. He gets very annoyed by students' lateness to rehearsal. If his students show up late, he cancels his class.

    When students show up late, George sometimes cancels class.

14. Joshua is forgetful. When he goes to buy food at the supermarket, he forgets to bring his wallet. When he needs to have clothes dry-cleaned, each time he drops off his dry-cleaning, he forgets to pick it up.

    Joshua doesn't always remember to pick up his dry-cleaning.

15. Anne has started knitting as a hobby, but she's not very good at it. Everything she tries to knit comes out wrong. Even the potholder she's making looks wrong. So she first unravels it, and then uses that wool to try knitting a sock.

    Anne partly unravelled the potholder.

16. James is a film director whose production is in trouble. He has spent all of his money and the set for the big final scene has mysteriously burned down. He wants to rebuild part of it, but because his last three movies were terrible, he can't borrow more money. As a result, he has to leave the film set burnt down.

    James didn't completely rebuild the film set.

Lieberman (2008) also used a Felicity Judgment Task, in which participants were asked to choose which of two sentences is the more appropriate description of an event presented in context. In his study, he added the following sentences to each of the contexts presented in (13–16) above:

17. a. When students show up late, George always cancels class.
    b. Joshua doesn't ever remember to pick up his dry-cleaning.
    c. Anne completely unravelled the potholder.
    d. James didn't rebuild the film set at all.

Thus, in this type of task, a situation such as that in (13) appears with two sentences to judge:

18. George is a music teacher. He gets very annoyed by students' lateness to rehearsal. If his students show up late, he cancels his class.

    When students show up late, George sometimes cancels class.
    When students show up late, George always cancels class.

In the language classroom, teachers could provide opportunities to improve processing of scalar implicatures by presenting situations similar to the ones exemplified in (13)–(16), discussing them explicitly, and then asking whether the sentences presented in italics in (13)–(16) make sense in the context of the story or are an appropriate description of the story. They can also invite the learners to correct the inappropriate sentences. They could lead the students to come up with the alternatives presented in (17). Teachers could also choose any other way they like to have students compare the pragmatically appropriate and the pragmatically inappropriate answers.

As is well known in FonF research (Azkarai Garai and García Mayo 2012; Basterrechea and García Mayo 2013; García Mayo 2002a, b; Nassaji and Fotos 2011), tasks that could in principle be considered traditional can be adapted to make them collaborative in the classroom. Learners can work in pairs and actually benefit from the interaction that takes place when they are trying to figure out what they consider the correct answer in this type of task. In (19), for example, learner A uses a paraphrase in his second interactional turn to explain to his peer what a blender is:

19. Learner A: And where is for example the blender?
    Learner B: What's that thing?
    Learner A: The thing you use to chop the fruit and make
    ….
    Learner B: Ah! Yes, yes!
    (Azkarai Garai and García Mayo 2013)

According to sociocultural theory, human cognitive development is a socially situated activity mediated by language (Vygotsky 1978); that is, knowledge is socially constructed by interaction and is then internalized. Several studies (Alegría de la Colina and García Mayo 2009; Storch 2002; Swain et al. 2002) have demonstrated the impact of peer–peer dialogue on second language learning. Through

interaction, learners regulate or restructure their knowledge and are provided with the possibility to develop not only their linguistic skills but also their problem-solving capacities.

We should not forget about new technologies in the classroom. Thus, one can also think of adapting a felicity judgment task in which the learners would be presented with a situation, whether in photographs or cartoon drawings or a short video describing the situation. They will have to decide whether the content of the video matches the situation described in the sentence that the teacher offers them. Such a technique has already been used experimentally by Papafragau and Musolino (2003). Videos used in research can be obtained from the researchers themselves, or the teachers can record short videos of their own. In principle, a digital repository of research tests used in the second language acquisition field, such as IRIS (http://www.york.ac.uk/education/research/cllr/digital-repository/), could be the ideal resource not only for researchers but for teachers as well.

10.8 Conclusion

In this chapter, we argued that acquisition of meaning in a second language is easy or at least easier than acquiring inflectional morphology (see Slabakova 2008, 2013, for the full argument). This is because computing sentence meanings and even some pragmatic meanings is a universal cognitive process. However, the difficulty comes in learning which lexical items capture which functional and lexical meanings. We took the example of scalar implicature, a productive process in which a speaker means more than she actually articulates, and the hearer understands this implication without any problem. We reviewed recent research (Slabakova 2010; Lieberman 2008, 2009), demonstrating that second language learners have no trouble computing scalar implicatures when they know the lexical items involved. However, both native speakers as well as second language learners have trouble processing the more complicated cases of implicatures, involving scalar reversals in negative sentences. Pointing to the psycholinguistic literature on individual differences, we suggested that practicing the simpler and the more complex constructions in second language classrooms can be beneficial to learners, because it is beneficial even to native speakers (Street and Dąbrowska 2010). We suggested that in FonF instruction, the materials used in L2 acquisition experimentation can be easily adapted to the instructional process.

The more general point we would like to make is the following: the contribution of generative linguistics to pedagogical practice can be highly significant. It can identify linguistic properties as potentially easy or hard, based on principled distinctions that stem from the grammar, as well as potential processing difficulties. Crucially, we urge for a stronger and more productive communication between researchers and second language teachers. The more we know about the cognitive process of learning another language, the better we can be at teaching it!

Acknowledgments The research discussed in this chapter was presented at the AAAL conference in Chicago in March 2011. We are grateful to the organizers of the colloquium "Half a century on: What relevance does generative SLA have for language teaching?" and to the editors of this volume for their careful editing. The research published in Slabakova (2010) was conducted with the financial and logistical support of the Obermann Center for Interdisciplinary Studies at the University of Iowa, which we acknowledge with gratitude. The first author is grateful to all the participants in the experiment, as well as the following research assistants: Kum Young Lee, Min-A Park, and Jae-Eun Kim. The second author wishes to acknowledge funding from the following research grants: FF12009-10264 and CSD2007-00012 (Spanish Ministry of Education), IT-311-10 (Basque Government), and UFI11/06 (University of the Basque Country).

References

Alegría de la Colina, Ana, and María del Pilar García Mayo. 2009. Oral interaction in task-based EFL learning: The use of the L1 as a cognitive tool. *International Review of Applied Linguistics* 47(1): 325–346.

Azkarai Garai, Agurtzane, and María del Pilar García Mayo. 2013. Does gender influence task performance in EFL? Interactive tasks and language related episodes. In *Language learners' discourse across L2 instructional settings*, ed. Eva Alcón Soler and María Pilar Safont Jordá, 249–278. Amsterdam: Rodopi.

Bailey, Nathalie, Carolyn Madden, and Stephen D. Krashen. 1974. Is there a "natural sequence" in adult second language learning? *Language Learning* 24: 235–243.

Bardovi-Harlig, Kathleen, and Zoltan Dörnyei. 1998. Do language learners recognize pragmatic violations? Pragmatic vs. grammatical awareness in instructed L2 learning. *TESOL Quarterly* 32: 233–259.

Bardovi-Harlig, Kathleen, and Beverly Hartford. 1996. Input in an institutional setting. *Studies in Second Language Acquisition* 17: 171–188.

Basterrechea, María, and María del Pilar García Mayo. 2013. Language-related episodes (LREs) in collaborative tasks by CLIL and EFL learners: Effects of oral interaction on written production. In *Interaction in diverse educational settings*, ed. Kim McDonough and Alison Mackey, 25–44. Amsterdam: John Benjamins.

Bouffard, Laurie Annie, and Mela Sarkar. 2008. Training 8-year old French immersion students metalinguistic analysis. An innovation in form-focused pedagogy. *Language Awareness* 17: 3–24.

Bouton, Lawrence F. 1988. A cross-cultural study of ability to interpret implicatures in English. *World Englishes* 7: 183–196.

Bouton, Lawrence F. 1994. Can NNS skill in interpreting implicature in American English be improved through explicit instruction? A pilot study. In *Pragmatics and language learning monograph series*, vol. 3, ed. Lawrence F. Bouton, 88–109. Urbana: DEIL, University of Illinois at Urbana-Champaign.

Cameron, Lynne. 2001. *Teaching languages to young learners*. Cambridge: Cambridge University Press.

Chierchia, Gennaro, Stephen Crain, Maria Teresa Guasti, Andrea Gualmini, and Luisa Meroni. 2001. The acquisition of disjunction: Evidence for a grammatical view of scalar implicatures. In *Proceedings of the 25th Boston University conference on language development*, ed. Anna H.-J. Do, Laura Dominguez, and Aimee Johansen, 157–168. Somerville: Cascadilla Press.

Clahsen, Harald, and Claudia Felser. 2006. Grammatical processing in language learners. *Applied PsychoLinguistics* 27: 3–42.

Collins, Laura, Pavel Trofimovich, Joanna White, Walcir Cardoso, and Marlise Horst. 2009. Some input on the easy/difficult grammar question. *The Modern Language Journal* 93: 336–353.

Crain, Stephen, and Rosalind Thornton. 1998. Acquisition of syntax and semantics. In *The handbook of psychology*, ed. Mattew J. Traxler and Morton Ann Gernsbacher, 1073–1110. Amsterdam: Elsevier.

DeKeyser, Robert. 2005. What makes second-language grammar difficult? A review of issues. *Language Learning* 55 (Supplement 1): 1–25.

DeKeyser, Robert. 2007a. *Practice in a second language. Perspectives from applied linguistics and cognitive psychology*. Cambridge: Cambridge University Press.

DeKeyser, Robert. 2007b. Introduction: Situating the concept of practice. In *Practice in a second language. Perspectives from applied linguistics and cognitive psychology*, ed. Robert DeKeyser, 11–18. Cambridge: Cambridge University Press.

DeKeyser, Robert. 2007c. Conclusion: The future of practice. In *Practice in a second language. Perspectives from applied linguistics and cognitive psychology*, ed. Robert DeKeyser, 287–304. Cambridge: Cambridge University Press.

DeKeyser, Robert. 2010. Practice for second language learning: Don't throw out the baby with the bathwater. *International Journal of English Studies* 10: 155–165.

Doughty, Catherine, and Jessica Williams. 1998. *Focus on form in second language acquisition*. Cambridge: Cambridge University Press.

Dulay, Heidi C., and Marine K. Burt. 1973. Should we teach children syntax? *Language Learning* 23: 245–258.

Dulay, Heidi C., and Marina K. Burt. 1974. Natural sequences in child second language acquisition. *Language Learning* 24: 37–53.

Ellis, Rod. 2006. Modelling learning difficulty and second language proficiency: The differential contributions of implicit and explicit knowledge. *Applied Linguistics* 27(3): 431–463.

Ferreira, Fernanda. 2003. The misinterpretation of noncanonical sentences. *Cognitive Psychology* 47: 164–203.

Ferreira, Fernanda, Vittoria Ferraro, and Karl G.D. Bailey. 2002. Good enough representations in language comprehension. *Current Directions in Psychological Science* 11: 11–15.

Fortune (with Mandy R. Menke), Tara Williams. 2010. *Struggling learners and language immersion education: Research-based, practitioner-informed responses to educators' top questions*. Minneapolis: University of Minnesota Center for Advanced Research on Language Acquisition.

García Mayo, María del Pilar. 2002a. The effectiveness of two form-focused tasks in advanced EFL pedagogy. *International Journal of Applied Linguistics* 12: 156–175.

García Mayo, María del Pilar. 2002b. Interaction in advanced EFL pedagogy: A comparison of form-focused activities. *International Journal of Educational Research* 37: 323–341.

Goldschneider, Jennifer M., and Robert DeKeyser. 2001. Explaining the "natural order of L2 morpheme acquisition" in English: A meta-analysis of multiple determinants. *Language Learning* 51: 1–50.

Grice, Paul. 1969. Utterer's meaning and intention. *Philosophical Review* 78: 147–177.

Grice, Paul. 1989. *Studies in the way of words*. Cambridge, MA: Harvard University Press.

Guasti, Maria Teresa, Gennaro Chierchia, Stephen Crain, Francesca Foppolo, Andrea Gualmini, and Luisa Merori. 2005. Why children and adults sometimes (but not always) compute implicatures. *Language & Cognitive Processes* 20(5): 667–696.

Gillingham, Gwendolyn. 2007. *Not every implicature is computed by default. Investigations into the effect of linguistic context on the rate of computation of scalar implicature*. Unpublished honours thesis. McGill University.

Harley, Brigitte, and Merrill Swain. 1984. The interlanguage of immersion students and its implications for second language teaching. In *Interlanguage*, ed. Alan Davies, Clive Criper, and Anthony P.R. Howatt, 291–311. Edinburgh: Edinburgh University Press.

Horn, Laurence R. 1972. On the semantic properties of the logical operators in English. Doctoral dissertation. UCLA.

Kroll, Judith F., and J.A. Linck. 2007. Representation and skill in second language learners and proficient bilinguals. In *Grammatical gender in the bilingual lexicon: A psycholinguistic approach*, ed. Ivan Kecskes and Liliana Albertazzi, 237–269. Dordrecht: Springer.

Jackendoff, Ray. 2002. *Foundations of language*. Oxford: Oxford University Press.

Liebermann, Mordecai. 2008. *An indirect look at second language acquisition of scalar implicatures*. Manuscript. McGill University.
Lieberman, Mordecai. 2009. *Interpretation at the semantics/pragmatics interface: Scalar implicatures in L2 acquisition*. Paper presented at The Mind/Context Divide conference, University of Iowa, Iowa City, May.
Long, Michael H. 1996. The role of linguistic environment in second language acquisition. In *The handbook of second language acquisition*, ed. William C. Ritchie and Tek K. Bathia, 413–468. San Diego: Academic.
López, Luis. 2009. *A derivational syntax for information structure*. Oxford: Oxford University Press.
Muñoz, Carmen. 2007. Age-related differences and second language learning practice. In *Practice in a second language. Perspectives from applied linguistics and cognitive psychology*, ed. Robert DeKeyser, 229–255. Cambridge: Cambridge University Press.
Musolino, Julien, and Jeffrey Lidz. 2006. Why children aren't universally successful with quantification. *Linguistics* 44: 817–852.
Nassaji, Hossein, and Sandra Fotos. 2011. *Teaching grammar in second language classroom. Integrating form-focused instruction in communicative context*. New York: Routledge.
Nassaji, Hossein, and Daphnée Simard. 2010. Current developments in form-focused interaction and L2 acquisition. *The Canadian Modern Language Review/La revue cannadienne des langues vivantes* 66: 773–778.
Noveck, Ira. 2001. When children are more logical than adults: Experimental investigations of scalar implicatures. *Cognition* 86: 253–282.
Noveck, Ira, and Anne Reboul. 2008. Experimental Pragmatics: A Gricean turn in the study of language. *Trends in Cognitive Sciences* 12(11): 425–431.
Pakulak, Eric, and Helen J. Neville. 2009. Proficiency differences in syntactic processing of monolingual native speakers indexed by event-related potentials. *Journal of Cognitive Neuroscience* 22(12): 2728–2744.
Papafragou, Anna, and Julien Musolino. 2003. Scalar implicatures: Experiments at the semantics-pragmatics interface. *Cognition* 86: 253–282.
Reinhart, Tania. 2006. *Interface strategies*. Cambridge, MA: MIT Press.
Röver, Carsten. 2005. *Testing EFL pragmatics*. Frankfurt: Gunter Narr.
Segalowitz, Norman. 2010. *Cognitive bases of second language fluency*. London: Routledge.
Shak, Juliana, and Sheena Gardner. 2008. Young learner perspectives on four focus-on-form tasks. *Language Teaching Research* 12: 387–408.
Siegal, Michael, Laura Iozzi, and Luca Surian. 2009. Bilingualism and conversational understanding in young children. *Cognition* 110: 115–122.
Simard, Daphnée, and Gladys Jean. 2011. An exploration of L2 teachers' use of pedagogical interventions devised to draw L2 learners' attention to form. *Language Learning* 61: 759–785.
Slabakova, Roumyana. 2008. *Meaning in the second language*. Berlin: Mouton de Gruyter.
Slabakova, Roumyana. 2010. Scalar implicatures in second language acquisition. *Lingua* 120: 2444–2462.
Slabakova, Roumyana. 2013. What is easy and what is hard in second language acquisition: A generative perspective. In *Contemporary approaches to second language acquisition*, ed. María del Pilar García Mayo, M. Junkal Gutierrez-Mangado, and María Martínez Adrián, 5–28. Amsterdam: John Benjamins.
Spada, Nina. 2011. Beyond form-focused instruction. Reflections on past, present and future research. *Language Teaching* 44: 225–236.
Sperber, Daniel, and Deirdre Wilson. 1986/1995. *Relevance: Communication and cognition*. Oxford: Blackwell.
Storch, Neomy. 2002. Patterns of interaction in ESL pair work. *Language Learning* 52(1): 119–158.
Street, James A., and Ewa Dąbrowska. 2010. More individual differences in language attainment: How much do adult native speakers of English know about passives and quantifiers? *Lingua* 120: 2080–2094.

Swain, Merrill. 1985. Communicative competence: Some rules of comprehensible input and comprehensible output in its development. In *Input in second language acquisition*, ed. Susan Gass and Carolyn Madden, 235–253. Rowley: Newbury House.

Swain, Merrill, and Sharon Lapkin. 1982. *Evaluating bilingual education. A Canadian case study*. Clevedon: Multilingual Matters.

Swain, Merrill, Lindsay Brooks, and Agustina Tocalli-Beller. 2002. Peer-dialogue as a means of second language learning. *Annual Review of Applied Linguistics* 22: 171–185.

Taguchi, Naoko. 2008. Cognition, language contact, and the development of pragmatic comprehension in a study-abroad context. *Language Learning* 58: 33–71.

Takimoto, Masahiro. 2006. The effectiveness of explicit feedback on the development of pragmatic proficiency. *Language Teaching Research* 10: 393–417.

Townsend, David J., and Thomas G. Bever. 2001. *Sentence comprehension: The integration of habits and rules*. Cambridge, MA: MIT Press.

Tragant, Elsa, and Mia Victori. 2006. Reported strategy use and age. In *Age and rate of foreign language learning*, ed. Carmen Muñoz, 208–236. Clevedon: Multilingual Matters.

VanPatten, Bill. 1990. Attending to form and content in the input. *Studies in Second Language Acquisition* 12: 287–301.

VanPatten, Bill (ed.). 2004. *Processing instruction. Theory, research and commentary*. Mahwah: LEA.

VanPatten, Bill. 2012. Input processing. In *The Routledge handbook of second language acquisition*, ed. Susan Gass and Alison Mackey, 268–281. London: Routledge.

Vygotsky, Lev. 1978. *Mind in society. The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Chapter 11
Great Expectations in Phonology? Second Language Acquisition Research and Its Relation to the Teaching of Older and Younger Learners

Martha Young-Scholten

11.1 Introduction

In 1985, Patsy Lightbown introduced teachers to the idea that much of what occurs during an individual's second language (L2) acquisition of inflectional morphology and syntax is internal. Her Great Expectations article discussed the implications of exciting new research that since the 1970s had been revealing that younger and older L2 learners' errors represent the same sort of systematic development as the non-adult forms of children learning their first language (L1). That is, acquisition involves an 'internal syllabus' which every learner, regardless of age, possesses. The operation of this internal syllabus gives rise to a systematic grammar, an 'interlanguage', which is the product of first language (L1) influence, L2 input and the same mental mechanisms responsible for children's nonadult forms. These are linguistic mechanisms largely inaccessible to conscious awareness or control, and Lightbown invited teachers to inform themselves about these mechanisms to understand the course of development their students' L2 acquisition takes. The message was that given sufficient comprehensible input (Krashen 1985), teachers could expect great things of their students, and the explicit teaching of grammar and error correction could be dispensed with. While there is ongoing debate about the nature of these mental mechanisms (are they specific to language or part of general cognition?) and on the necessity of the L2 learner's attention, there is now overwhelming evidence that both younger and older L2 learners follow predictable paths during the acquisition of a second language. Research has focused and continues to focus on discovery of new patterns of errors and sheds increasingly more light on the subconscious operation of linguistic mechanisms. (See other chapters in this volume.)

M. Young-Scholten (✉)
School of English Literature, Language and Linguistics,
Newcastle University, Newcastle upon Tyne, UK
e-mail: martha.young-scholten@newcastle.ac.uk

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*,
Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_11,

Study after study has shown that exposure to L2 input by at least puberty is essential for successful acquisition of phonology (see Herchensohn 2007 for an overview of the age factor). Some have suggested (e.g. Long 1990) that the period of resonance, this 'critical period' (Lenneberg 1967) for phonology, begins to close at age 6 – far earlier than for other components of language. Here public figures such as the author Joseph Conrad and politician Henry Kissinger are cited as examples of postpuberty L2 learners with native-like morphology and syntax but heavy Polish and German accents.

Lightbown's great expectations focused on L2 learners' acquisition of morphosyntax. If the critical period for phonology starts to close during primary schooling, does it make sense to ask whether teachers can have similarly great expectations for the phonological development of their L2 learners? The answer to this question does not hinge on whether acquisition is ultimately successful but rather on whether the same internal linguistic mechanisms are used during the process of L2 development, regardless of age. If we find similarities, then we need to consider whether lower levels of ultimate attainment in L2 phonology are attributable to nonlinguistic factors. So, is there evidence for an internal syllabus responsible for the acquisition of phonology? If there is, teachers need to understand how their learners develop in response to the input. The L2 acquisition of phonology, however, turns out to differ from the L2 acquisition of morphosyntax in ways that require us to consider whether teachers' great expectations of learners can be met by simply exposing learners to plenty of input. These differences range from the strong association of accent and identity to the role of literacy in pronunciation and the quality of input. Before considering these, the case must be made that L2 learners, regardless of age, are equipped with internal phonological mechanisms that in principle allow the teacher to entertain great expectations.

Studies of learners acquiring the phonology of an L2 reaching back to the 1970s have shown that much the same internal mechanisms operate across the lifespan. Most research in L2 phonology has been on postpuberty learners, and as we will see below, these older learners demonstrate subtle knowledge of their L2 sound system which neither comes from their L1 nor from what has been taught in the classroom. Most of the studies referred to and examples provided in this chapter are of English because of its dominance in L2 acquisition research. Unlike most other languages, consideration of English as an L2 implicates its current status as an international language, spoken by non-native speakers to each other. This situation may be leading to an international English phonology, that is, a variety of English that is not identified with a particular L1-based accent (Jenkins 2000). This purported variety and nativised varieties of English (e.g. Indian English) alongside those presented as models to students (British Received Pronunciation and General American English) raise the question of which – if any – variety of English should be the focus of classroom instruction in the twenty-first century. Jenkins (2002) argues that the focus in teaching pronunciation should be on an international English 'core' which is defined by what is required for intelligibility in communication among non-native speakers. We leave such crucial considerations aside in this chapter since our concern is with the internal mechanisms that might facilitate the learner's acquisition of any variety to which he or she is exposed.

Before discussion of how one can best teach pronunciation (of any variety), the next two sections in this chapter detail relevant aspects of phonology and present a snapshot of what is known about the operation of internal linguistic mechanisms in the L2 acquisition of phonology. In the section that follows, external factors that might influence the acquisition of a second phonology are considered. Some of these factors are under teachers' control. In considering findings from the study of young learners, a set of pedagogical implications will be offered, and these will pertain to young learners for whom expectations can always be great.

11.2 Phonology

Phonology is a mental system of patterns, rules or constraints. These are abstract in the sense that they are internal and underlie what an individual comprehends/perceives and produces. Phonology encompasses segments and their behaviour as well as how sounds are grouped and behave beyond the segment: syllables, stress, tone, rhythm and intonation. The field linguist working on a language s/he does not yet know, the newborn soaking up sounds and the L2 learner in or outside the classroom are all faced with the same initial task: words must be learned, and this means acquiring segmental phonology. To accomplish this task, the learner must extract from the stream of speech the set of sounds that the language uses to distinguish words; namely, the learner must figure out the phonemic inventory of the language. (See Juscyzk 1997 for a fascinating account of how babies segment the stream of speech even before comprehending their first word.) The human mind is particularly adept at attending to acoustic (or gestural in signed languages) information to arrive at abstract representations that conform to those of other members of a language community.

A child acquiring English comes to know that 't' (as in tip) and 'd' (as in dip) are phonemes; they distinguish meaning. An aspirated 't' (t^h) also occurs in English, as in [t^hɔp] 'top', whereas an unaspirated 't' occurs after a consonant, as in [stɔp] 'stop'. Aspiration does not serve to distinguish meaning; there is no possible, separate word in English where the 't' is not aspirated [tɔp]. Thus, not aspirating an initial 't' is simply a mispronunciation. The task confronting the learner is that of sorting out phonemes from acoustic input where both aspirated and unaspirated 't' are heard. Phonemes are abstract and their pronunciation depends on various factors including the position of the phoneme and other sounds surrounding it. For example, the addition of the 's' in English to a noun for pluralisation or possession or to a verb to mark third-person singular yields three pronunciations of the same phoneme. After a voiceless sound, the 's' is voiceless, as in third-person singular [sɪts]. After a voiced sound, the 's' is voiced, as in possessive [sɪdz] 'that's Sid's book'. After certain other sounds, a vowel precedes it as in [kesɨz] 'cases'. This process of voicing assimilation has as its starting point an abstract entity – a phoneme – that unites all three pronunciations.

In contrast to phonology, phonetics involves the observable articulatory and acoustic characteristics of the sound system. Phonetics figures just as importantly in the study of the acquisition of an L1 or L2. In this chapter, however, we focus on

phonology because the abstract entities it considers are not observable and must be studied indirectly albeit using speakers' production as a starting point. There has also been a good amount of work carried out on what L1 and L2 learners perceive, based on the premise that one must perceive something prior to producing it. In addition to showing that the learner's L1 has a strong influence on perception of the L2, particularly at the start, this research shows varied results in terms of the relation of production to perception; it is sometimes the case that (particularly classroom) learners are able to produce native-like L2 forms but do not demonstrate native-like perception (see e.g. Hayes-Harb and Masuda 2008 on English-speaking learners of Japanese). Rather than provide a summary of such studies in the present chapter, we focus primarily on L2 learners' production in terms of how it can indicate an internal interlanguage system. Production is, of course, readily observable by teachers.

11.3 Research on L2 Phonology

Various researchers have long argued that the linguistic mechanisms underlying the acquisition of a second language sound system are available across the lifespan (e.g. Wode 1993). But surely if they were, learners of all ages would end up with very good accents in their L2. Most of those who start past the age of puberty do not. But in fact, prepuberty classroom learners often do not – a topic to which we return below. First let us consider the evidence for the lifelong operation of these mechanisms, independently of age of initial exposure.

11.3.1 L1 Influence

Without a doubt the learner's knowledge of his/her L1 phonology has a profound influence on acquisition of a second sound system. This observation was captured over half a century ago by Lado (1957) in his Contrastive Analysis hypothesis. Under the CAH, L1–L2 differences lead to difficulties and L1–L2 similarities facilitate acquisition. That is, errors are expected when certain aspects of the L1 and L2 differ but not when these aspects are similar. However, researchers began to discover that when it comes to acquisition at the segmental level, the learner's L1 phonology leads to more difficulties when the L2 is similar than when it is different. This is the essence of Flege's (1995) Speech Learning Model, Best's (1995) Perceptual Assimilation Model and Kuhl and Iverson's (1995) Native Language Magnet Theory. These models and theories all pertain to the L2 learner's existing phonemic inventory which treats as equivalent those similar sounds in the L2 input, regardless of whether these sounds have phonemic status and distinguish words in the L2. An Arabic speaker learning English will hear instances of [p] as /b/, hearing 'blight' for 'plight' because Arabic lacks a voicing distinction for these two bilabial stops. And an English speaker learning French will confuse the French /u/ in *vous* 'you' with the front-rounded vowel /y/ in *vu* 'see' because English only has back-rounded vowels.

More recent research suggests that while both L1–L2 similarities and L1–L2 differences result in learners' production of nontarget forms, it is the similar forms which result in more nontarget forms and it is these forms which persist over time in learners' systems (Major 2008). For example, English learners make more progress producing the front-rounded vowel than they do producing the highly similar, but not identical, back-rounded vowel in French. Recent experimental research by Sabourin et al. (2013) sheds light on what we already suspect: bilinguals are better than monolinguals at learning additional languages. The study drew on both behavioural data, where participants had to note what they had perceived, and on neurological data, where participants heard tokens while electrodes attached to their scalps recorded electrical activity. Tested was baseline discrimination and discrimination after a learning task to distinguish between voiceless alveolar and retroflex consonants, as in Hindi. Those who were fluent in more than one language showed more sensitivity than monolinguals to acoustic nuances not represented in the languages they already spoke. Such individuals are ultimately expected to make more progress in acquiring similar sounds. Flege's and others' models do not explain everything, and to do so, researchers have felt it necessary to look more deeply into phonological representations to address some perplexing questions. Brown and Matthews (1997) did just this in their phonology-based investigation of why the English liquid contrast, namely, /l/ vs. /ɹ/, is so difficult for Japanese speakers. They concluded that this was due to how Japanese deploy certain phonological features. They apply the idea that phonemes are bundles only of those features required to distinguish them from other phonemes. For example, it is not necessary to specify in the feature bundle for /i/ in English that it is voiced; because all vowels in English are voiced, it is simply enough to indicate it is a vowel. It seems reasonable to assume that a speaker's phonology only specifies what is required for phonemic distinctions. Under this theory of phonology, the feature needed to distinguish /l/ and /ɹ/ in English (a 'subcoronal' feature) simply does not exist in Japanese, predicting this difficulty. While this study illustrates the operation of internal phonological mechanisms, it does not make a case that these mechanisms are active across the lifespan. We now turn to a study which does.

As described above, not only do languages have an inventory of phonemes which serve to distinguish words, but there are additional sounds – some of which may not be in the phonemic inventory – produced when phonemes appear in certain positions or interact with adjacent phonemes. Eckman and Iverson (1997) point out that the processes or rules applying in such situations within a speaker's lexicon during word formation or 'post-lexically' whenever the phonemes in question are adjacent/appear in a particular position. When it comes to the former, the 'derived environment constraint' dictates that such a rule applies when new words are formed, and a principle referred to as 'structure preservation' dictates that the sounds produced are from the phonemic inventory. In addition, lexical rules apply only to certain suffixes and, for example, account for the alternation in act ~ action ~ acting where /t/ is palatalised when -ion is added but not when -ing is added. The 'flapping' of /t/ is a prominent characteristic of North American English, but not part of the phonemic inventory. Flapping is a post-lexical process that applies to /t/ whenever it occurs after a vowel and is followed by vowel-initial (normally) unstressed syllable: in

single-morpheme words such as ‘butter’, in derived words such as ‘later’ and across word boundaries as in ‘let it go’.

Eckman and Iverson set out to see whether this constraint and principle might subconsciously enable L2 learners of English to turn the post-lexically produced sounds in the learners’ interlanguage English into phonemes in the L2. They conducted a small-scale study of nine intermediate-level Korean- and Spanish-speaking adults learning English in the USA. The segments examined were two sets present in learners’ L1 output due to post-lexical rules but not in their phonemic inventories: Korean lacks the palatal fricative /ʃ/, but a post-lexical rule produces it in certain environments, and Spanish has no interdental fricatives but a post-lexical rule produces these in certain environments. Eckman and Iverson found that some learners simply transferred these post-lexical rules and had not acquired the phonemic distinctions required in English. But they also found some learners who were further along in their acquisition in that they limited their transferred post-lexical rules to the lexicon. That is, Korean learners did not always erroneously produce /ʃ/, and Spanish speakers did not always erroneously produce interdental fricatives; rather they only did so when producing words with suffixes. What is subconsciously available does not need to be taught (in fact, it rarely is), and Eckman and Iverson recommend that teachers focus on the learner’s lexicon, drawing attention to relevant lexical contrasts in single words and in derived words, to provide examples of the derived environment constraint. Structure preservation then automatically and subconsciously applies to guarantee that the sounds under consideration are phonemes.

We thus have evidence from learners’ systematic errors of the operation of internal mechanisms on the subconscious knowledge learners have of their L1 phonology. The next section provides several examples of studies that reveal the operation of internal mechanisms beyond the level of the segment.

11.3.2 Universals and Suprasegmental Phonology

In the late 1970s, empirical studies of L2 learners began to reveal that not only could interlanguage systems be observed and the operation of an internal syllabus be detected for the acquisition of morphosyntax but these observations also held for phonology. Thus in 1987, Ioup and Weinberger in *Interlanguage Phonology* presented a collection of studies by authors who argued for the operation of various phonological universals in learners’ development of their L2 sound systems. From the late 1980s onwards, developments in linguistic theory in the form of the Principles and Parameters of Universal Grammar prompted researchers to consider binary or multi-valued phonological parameters and how these might be reset during the course of acquisition of a second language. Parameters include binary-valued parameters relating to syllable complexity (e.g. allowing clusters in syllable onsets and codas) and multi-valued parameters for word stress (e.g. Archibald 1992).

Studies of L1 children learning languages which allow clusters of consonants in the syllable onset and coda such as German and English reveal that these are

routinely simplified to CV sequences in early production. In addition, phonological features tend to be associated with specific positions: labial consonants are associated with onsets and velars with codas; obstruents are voiced in the onset and devoiced in the coda. The analysis of nonadult patterns of production thus indicates that children are operating under the influence of innate, or universal, phonological mechanisms. A relatively recent development is Optimality Theory/OT (Prince and Smolenksy 2004). OT takes the set of universal constraints observed to operate across languages and during child language acquisition and involves them in a system of constraint ranking particular to specific languages. It is thus the task of the child to arrive at, through exposure to input, the constraint ranking of the language to which she/he is exposed. Under OT, stages in children's phonological development are characterised by nonadult constraint rankings.

In the L2 acquisition of suprasegmental phonology, error patterns also turn out to be systematic. A range of studies has shown that when L2 learners (of varying ages of initial exposure to the target language) grapple with the syllable structure, stress, rhythm or intonation of a new language, in addition to L1 influence, universals are heavily involved. With respect to OT, researchers working within this framework propose that the second language learner commences with his/her L1 constraint ranking, and the task is the same as the child's: to arrive at the constraint ranking of the target language, but this time through constraint re-ranking, and L2 learners' stages of development are similarly characterised by their nontarget-language rankings. (See e.g. Escudero and Boersma 2004 and Hancin-Bhatt 2008.)

One of the principles or constraints that reveals operation of phonological mechanisms in L2 phonology is the sonority sequencing principle and the sonority scale (Selkirk 1984). Sonority sequencing refers to the order in which consonants typically arrange themselves within a single syllable when a language allows clusters: stops--fricatives--nasals--liquids--glides **vowels** glides--liquids--nasals--fricatives--stops. Languages vary in terms of which consonants can be adjacent, and minimal sonority distance then refers to language-specific constraints on which consonants in the sequence can appear adjacent to each other. Do these mechanisms remain available for use across the lifespan? Speakers of languages that allow no consonant clusters learning languages that do allow them provide test cases. When confronted with an L2 syllable structure more complex than in their own language, learners initially attempt to bring these syllables into conformity with their L1 syllable structure. Researchers have found that L2 adults typically either delete one or more of the consonants in a cluster or insert a vowel between consonants in the word they are attempting to produce. Both vowel insertion and consonant deletion may be straightforward cases of transfer: when the addition of affixes results in adjacent consonants in the learner's L1, there will be a rule of deletion or of vowel insertion. Studies reveal that learners' attempts at producing sequences that do not occur in their L1 are in conformity with sonority sequencing. An example is learners' different treatment of the clusters with initial /s/ that either violate or obey the sonority sequence. Thus, learners show different error patterns with sonority-violating /s/ + /t/ as in 'stop' vs. sonority-obeying /s/ + /l/ as in 'slide' (see Broselow 1987). In his study of adult Spanish learners of German, Tropf (1986) found similar patterns with respect to learners' deletion of consonants in clusters.

In their study of intermediate-level Japanese learners of English, Broselow and Finer (1991) found that while learners' syllables were not target-like in terms of vowel insertion to break up clusters, they had moved beyond Japanese syllable structure. They were producing interlanguage syllables in conformity with the sonority sequence whose minimal sonority distance (or parameter setting) was midway between that of Japanese and English. L2 adults have been found to produce extra vowels for purposes other than to break up consonants in clusters. Broselow and Park's (1995) Korean learners of English added a vowel after a final consonant which was actually permitted in their L1. They did so for English words with long vowels which are not permitted in their L1. Thus, learners correctly pronounced 'bit' with its short vowel but pronounced 'beat' as two syllables, with the same short vowel in the first syllable and an additional short vowel they added. This captured the vowel length they perceived – but could not yet produce in a single syllable.

11.3.3 The Longitudinal Study of Postpuberty L2 Phonology

Researchers employ various study designs to collect data for analysis. Most typical in L2 phonology are case studies where data are collected only at one point in time and from learners at a single point in their development. Studies of learners who are known to be at different points in their development, namely, cross-sectional studies, are less common. Least common are longitudinal studies which track the same learner or learners for a sufficiently lengthy period of time (e.g. a year or more) to observe changes over time. Yet from these studies we know that development is not always linear; learners can correctly produce something at one point, and during the next several data collection sessions incorrectly produce it. A clear illustration of such development is the child Hildegard, studied by Leopold (1944) whose initial production of 'pretty' was adult-like but whose subsequent nonadult productions of the word revealed the application of rules in her developing phonological system. Longitudinal studies also consider not only route of development but also rate as a 'more insightful measure of learning' (Eckman 2008:101). For example, Major's (2008) model of development in L2 phonology predicts that universal phonological mechanisms become involved after the early L1-based stages of L2 phonological development. A slower rate of development at this point onwards could be an indication that such universals resemble certain characteristics of the learner's L1. An example is German speakers' transfer to English of final devoicing. A contrast between voiced and voiceless obstruent consonants (e.g. the stops b, d, g; p, t, k) at the end of a word is considered to be more difficult or more marked than word-internal or word-initial voiced–voiceless contrasts. Production of final voiceless consonants for voiceless consonants indeed persists for German learners of English (Eckman 1977).

There is a long tradition of longitudinal study in child language acquisition, including the study of phonology, from Preyer (1889) through to Smith (1973), Fikkert (1994), Rose (2000) and beyond. In L2 acquisition, longitudinal studies are

usually the province of morphosyntactic development and are studies of younger learners (see e.g. Haznedar and Schwartz 1997; Prévost and White 2000). Longitudinal studies of older naturalistic learners are overwhelmingly of migrant workers. When it comes to phonology, Gut (2009) notes that only 17 of the hundreds of studies over the past 39 years have been longitudinal, and most of these have focused on the acquisition of segmental phonology; for longitudinal studies on syllable structure, stress and/or rhythm, see Abrahamsson (2003), Akita (1998), Carlisle (1998) and Edwards (2006). Below we look at several longitudinal studies, starting with one on postpuberty learners, after which we will consider recommendations for teaching adults. In the following section, we then look at longitudinal studies of prepuberty learners and at a longitudinal experimental study and then consider the pedagogical implications of these studies.

As pointed out several times above, the initial task confronting the L2 learner is sorting out on the basis of sounds heard in the input the phonemes that distinguish meaning in the L2. Young-Scholten's (2004) longitudinal study of three English-speaking adolescents (aged 15, 16 and 17) learning German on an exchange programme reveals how this operates in connection with universals. During their year in Germany, they lived with host families and attended German secondary schools. There was little to no interaction with other English speakers. One of the first major revisions in our understanding of influences on L2 phonology other than the learner's L1 was the product of two papers by Eckman. In Eckman (1981), he discusses his discovery that non-beginning Mandarin speakers of English learners added a vowel after final voiced obstruents but not after final voiceless obstruents: 'zip' was correct as [zɪp] 'zip' but 'rob' was incorrect, as [rabə]. The second example is in part an instance of L1 influence; Mandarin does not allow final obstruents. Mandarin strongly prefers monosyllabic words, and one would therefore expect CV (omission of the final /b/ in 'rob') rather than addition of a syllable. Moreover, there is nothing directly in Mandarin that would tell the learner that /t/ is less marked than /d/ in final position since Mandarin does not allow either in final position. It appears that learners, in their sensitivity to what is less and more marked, have retained the subconscious knowledge that young children have.

As mentioned briefly above, Eckman (1977) also formulated a hypothesis that predicted that voicing contrasts in final position would be relatively more difficult (most marked) than those in medial position, and those in medial position relatively more difficult than those in initial position (least marked). Markedness refers to certain marked phenomena which imply the existence of other, unmarked phenomena. In the case of voicing contrasts, a final contrast implies a medial and initial contrast, a medial implies an initial contrast, but an initial contrast implies neither. Markedness is revealed when comparing the languages of the world and has also been proposed to hold in language acquisition, where unmarked/less marked phenomena are acquired before more marked phenomena. Eckman's Markedness Differential Hypothesis correctly predicts German speakers' problems acquiring a final voicing contrast in English and English speakers' ease of acquiring the initial voicing contrast for palatal fricatives in French. However, what this hypothesis fails to predict are problems which English-speaking learners have with final devoicing in German.

German allows voicing contrasts in initial and medial position, but it disallows such a contrast in final position. Only the least marked of the voiced/voiceless pair, a voiceless consonant, appears in final position. Thus, the /d/ in the 'Bund' of *Bundesrepublik* 'federal republic' is pronounced as [t] if one is just referring to the federation, *der Bund* [bUnt]. This results in a word that is homophonous with the German word for coloured, *bunt* as in *buntes Kleid* 'coloured dress'. The [t] is an allophone of the phoneme /d/, and both /t/ and /d/ are German phonemes, just as in English. English-speaking learners of German should successfully transfer this distinction from their L1, and because lack of a final contrast is unmarked, they should have no problem devoicing final voiced consonants in German. However, learners still need to arrive at the underlying representations for German words – the phonemes – and this entails an additional step: figuring out what final consonants underlie, for example, *bunt* and *Bund* from the surface form [bUnt]. If the learner has little experience with the /d/ of *Bund* in, for example, *Bundesrepublik* or the /t/ of *bunt* as in *buntes Kleid*, both pronunciations [bUntəs] and [bUndəs], respectively, are possible. Over the course of their year in Germany, the three learners mentioned above made impressive progress in their acquisition of morphosyntax and in their acquisition of new/different (under Flege's 1995 definition) phonemes in German such as the voiceless velar fricative in *Bach* and the palatal fricative in *ich* 'I'. However, they experienced ongoing problems with the underlying representations of words with the final obstruents /p, t, k/ and /b, d, g/ which are the same in English and in German. They had ongoing uncertainty regarding whether certain words ended in a voiced or voiceless phoneme.

11.3.4 Implications and Applications for Teaching Pronunciation to Older Learners

The three learners in Young-Scholten's (2004) study were acquiring their L2 under the best possible circumstances. Apart from brief encounters with other English speakers, their exposure to German was from members of the family with whom they lived, from teachers at school and from their native-speaking German peers. The snapshot provided in Section 11.3.2 of studies revealing that internal phonological mechanisms continue to operate for postpuberty learners suggests that these three learners should have made more progress in the simple task of figuring out the underlying representation of words. That they did not make such progress dampens great expectations for postpuberty learners.

The emphasis of fluency over accuracy wrought by the communicative teaching movement has led to a de-emphasis on traditional techniques such as drilling and a de-emphasis on segmental phonology. In their 2005 state-of-the-art paper on teaching pronunciation, Setter and Jenkins note that adopting a communicative approach has led to considerably more focus on the suprasegmental aspects of pronunciation. There has been a good amount of debate over the years on how best to teach

pronunciation to postpuberty learners. Recent work stresses the need for teachers to raise learners' awareness of their pronunciation, and both Setter and Jenkins and Rogerson-Revell (2011) stress the need for teachers to inculcate in learners concern for their pronunciation, particularly for those aspects of pronunciation that are fundamental to comprehension by other speakers. How does this relate to what has been discussed in the preceding sections? Teachers are not working with automatic L1-transfer machines. Moreover, there is more to non-native pronunciation than a vocal tract that cannot learn new habits. Non-native pronunciation and patterns of errors reveal that postpuberty learners are highly capable. The studies by Eckman and Iverson (1997), Sabourin et al. (2013) and Young-Scholten (2004) point to the need to focus on the lexicon as well. In order to acquire new phonemic distinctions, learners need help in explicitly noticing the forms that occur and do not occur with the addition of prefixes and suffixes. Note that this goes beyond the traditional ship/sheep minimal pair drills. The focus of this chapter has been on production in L2 phonology, yet there has been a good amount of research carried out on perception which clearly points to the input-filtering action of the learner's L1. Here Rogerson-Revell notes that studies also – not unexpectedly – show that perceptual training often leads to automatic improvement in production (2011:212), echoing the observation made decades ago by Scovel (1981) that extended listening prior to production improves oral production.

It is safe to conclude that the majority of recommendations for teaching postpuberty learners have and continue to involve conscious attention by the learner. This is not misguided. But it is important to keep in mind that older learners acquire implicit knowledge of their L2 phonology from mere exposure to input. That is, even older learners possess an internal syllabus for the acquisition of phonology which is based on phonological mechanisms such as the principles and constraints discussed above that remain in operation across the lifespan. The implication of phonology-driven L2 acquisition research is that while expectations of teachers of postpuberty learners might not be great, they can expect their learners' interlanguage phonologies to grow without their direct intervention. What is required is exposure to input, from speakers of the variety the learner aims to acquire. This point will be expanded on below.

11.4 Young Learners

11.4.1 Longitudinal Studies of Young Learners

Up to this point, the focus has been on postpuberty learners. We now turn to prepuberty learners, starting with a review of several longitudinal studies with important pedagogical implications.

Based on what has been discussed regarding postpuberty learners, it is hardly surprising to discover that prepuberty learners' error patterns also demonstrate the

operation of phonological mechanisms. In her study of two Vietnamese boys learning English in the USA, Sato (1984) found that despite clusters that are neither allowed in Vietnamese onsets nor codas, the boys more quickly acquired onset clusters than coda clusters, revealing a pattern of development observed for both children learning their L1 and adults learning their L2 (see review in Young-Scholten and Archibald 2000). Wode (2009) looked at the oral production of English of learners whose first exposure occurred between the ages of three and six in either a naturalistic context (in the USA) or in an immersion classroom in Germany. While there was considerable individual variation along with evidence of transfer by learners of all ages, in his comparison of error type, he found no age- or exposure-type-dependent differences. Snow and Hoefnagel-Höhle's (1982) study of 33 child, adolescent and adult speakers of English learning Dutch in the Netherlands looked at auditory discrimination and pronunciation along with morphology, syntax and vocabulary. Results showed that older learners were initially faster in both morphology and phonology but that age-based differences in the latter levelled out by the end of the year. The children then overtook both groups of older learners some 1½ years after initial exposure to Dutch. This led to an oft-repeated takeaway message: 'older is faster, but younger is better in the long run.' With ample input – immersed in the target language – a younger start will produce the expected success.

Winitz et al. (1995) observed for over 6 years the ultimately successful acquisition of English by a Polish-speaking boy whose input was, apart from at home, only English (there were no other Polish-speaking families nearby). He was 7;5 at the start of the study and had no special English classes. His primary source of input was the neighbourhood children and his classmates. During the first 2 months, his production was minimal. He began by speaking in single-word utterances and then moved on to two-word utterances. Winitz et al. claim that the child's minimal production enabled him to 'store accurately in auditory memory the canonical phonological units and phonotactic principles of the second language' (p. 119). Most of the child's progress was made by the end of his first year, providing a contrast to the three learners in the Young-Scholten (2004) study and the older learners in the Snow and Hoefnagel-Höhle (1982) study.

Winitz et al. argue that observed differences in ultimate attainment for younger and older learners in immersion contexts can be traced to pre-immigration exposure both to teachers' and peers' non-native accents and to pressure to produce language from the start of exposure. We can, to a certain extent, question the former claim; Young-Scholten's (2004) study shows that even high levels of exposure to native speakers are not sufficient for postpuberty learners (and of course much anecdotal evidence also bears this out). We do not know whether there is some threshold of exposure for phonological acquisition that makes the fossilisation of native language patterns in speech production and comprehension inevitable. Like various other issues mentioned in this chapter, this remains a relatively under-researched one, but see Akita's (1998) longitudinal study of three Japanese university students, two of whom did shift their Japanese pitch accent system to English stress by the end of the year they spent in England.

Winitz et al.'s second claim, that pressure to perform impedes acquisition of phonology, is one that has received little if any attention. Despite lack of research investigating this claim, there are nonetheless pedagogical implications that tie into the point made in Section 11.3.4 regarding perception. If perception exercises can automatically lead to more native-like production, then teachers are advised to prioritise listening over speaking, particularly at the start when, at least for younger learners, a period of minimal or no production seems to characterise the first several months of exposure to a new language (Krashen 1985). An argument can be made that children in L2 classrooms do not require explicit focus on phonology; they simply require input.

We now turn to whether these results can be replicated in the sort of non-immersion classrooms in which most foreign language teaching occurs.

11.4.2 Great Expectations in the Classroom

In the mid 2000s, England followed an educational trend sweeping the world in shifting the focus of foreign languages to primary level (in fact, in 2004 England went one step further by abolishing required foreign language study at secondary level), following the idea that younger is better in the long run, in terms of attaining near-native proficiency and based on the observation that children are more enthusiastic about learning foreign languages than adolescents are. We now turn to influences on the acquisition of a second phonology that have received less consideration but might well hold the key to insuring that expectations can be great for younger learners.

Hugh Laurie as television's Dr. House manages to fool audiences worldwide that he is American. He is not. How did an Oxbridge-educated comedic actor manage this? Is he exceptionally talented? Perhaps. But exceptional circumstances are involved; it turns out that Laurie has long performed American blues. Before he took on the role of House, he had already spent countless hours singing American English. Cases of older learners' successful acquisition of a second phonology which have been systematically investigated include Dutch learners of closely related English (Bongaerts 1999) and English learners of closely related German (Moyer 2009) but also English-speaking learners of unrelated Arabic (Ioup et al. 1994). These studies all reveal that learners received considerable native-accented target language input over years, often as the result of high levels of motivation to interact with native speakers. The longitudinal studies of adults referred to above were short in duration (1½ years or shorter) and did not include measures of motivation and attitude.

In the classroom, input differs in three ways from what learners are exposed to in an immersion setting: input involves information about language (what we refer to as instruction), input comes from the non-native production of other learners and often the teacher and input is frequently written rather than aural. Let us look at each difference in turn. First, at least some of the input will either be corrective feedback

or explicit evidence (in the form of explanation that learners must process metalinguistically). Recommendations for teaching pronunciation invariably revolve around raising learners' awareness, coaxing them to notice certain forms. Is this necessary when teaching young learners? We return to this fundamental point below.

Second, learners also receive other forms of input; Young-Scholten (1995) refers to this input as positive evidence with negative consequences. Namely, if such input is produced by teachers who are not native speakers and other students who are clearly not, the input learners receive represents an accent which deviates from whatever accent is held up as standard. Young-Scholten does not extend her discussion to pedagogical implications, but points out that the data which form the basis of claims about native language influence and the critical period in L2 phonology often come from learners who had initially received considerable L1-accented input in their home countries prior to moving to the target language country where they participated in the studies reported on. (See also Winitz et al.'s (1995) claim above.)

Third, classroom input also includes exposure to written text. While there is less interaction with written text by primary school children still learning to read and write, written text is invariably present in the second language classroom and even outside the classroom where it can constitute a major portion of an educated adult learner's exposure to the L2. This constitutes an important difference between first and second language acquisition and is one which is the least researched in L2 phonology. This is unfortunate because it is perhaps this research that has the most potential to inform foreign language pedagogy.

11.4.3 Native-Accented Input in the Primary Classroom

In her discussion of the international English 'core' necessary for intelligibility among non-native speakers, Jenkins (2000, 2002) includes consonant clusters and sentential stress. Studies of speech perception also indicate that incorrect primary stress in words causes difficulties in accurate parsing of a message (Cutler 1984). Speakers of a (five) tone CVC syllable language such as Thai whose prosody revolves mainly around monosyllabic words who are learning English must acquire multisyllabic words with complex codas and onsets and figure out which syllable in a word is most prominent and how that prominence is marked. For his 2007 PhD, Sumdangdej began by discussing the results of a baseline study of 27 primary, secondary and university students in Thailand learning English. The study confirmed that despite years of classroom exposure to English (since early secondary school for the university students) apart from the university English majors, Thai speakers of English demonstrated an interlanguage phonology that was decidedly non-native in terms of syllable structure and stress. Sumdangdej then set out to determine whether certain teaching techniques could improve children's pronunciation of syllable structure and stress. Outside of Bangkok in the rural area where the study was conducted, children's exposure to English was limited to the classroom; television and popular music was invariability in Thai. Two methods of teaching were used

with two experimental groups; a control group who received no treatment was also included. The researcher taught all three groups as separate classes. The experimental methods involved the words from the first-year primary English curriculum where the researcher made an audio recording of two English children the same age as the Thai children who read these words. One method involved the teacher raising children's awareness of syllable structure and stress and then listening to these recordings to learn the words on the curriculum; this was used for 23 children aged 6;11 to 11;1. The second method involved 27 children aged 7;5 to 8;10 listening to the recordings while they engaged in activities such as colouring or ticking pictures. The recording used for this group was slightly different; it included the English children giving these instructions (e.g. 'tick orange' 'colour apple') to focus the children's listening on the tape. In both groups, children were asked by the teacher to imitate the voices on the tape but in neither group did the teacher correct the students. In the control group of 30 children aged 6;11 to 8;5, the teacher followed the normal classroom practice of pronouncing the words in his Thai-accented English and correcting the learners. The groups were roughly balanced in terms of gender.

An unavoidable aspect of the study was that the control group had actually already had a semester of English instruction from another Thai teacher when the study began. The two experimental groups, however, experienced their first exposure to English during the study. The same teacher (the researcher) delivered 20-min English lessons to all three groups 5 days a week for 4 weeks. The lessons revolved entirely around methods described above with the aim of learning a set of vocabulary dictated by the national curriculum. Prior to instruction, after the 4 weeks of instruction and after a 4-week school break, the pupils' production and perception of syllable structure and of stress was tested, using the words the children had learned (which varied slightly for the groups; see Table 11.1). Stress presents considerable difficulty for tone language speakers; we therefore turn to the results of two production tests that looked at stress assignment on two-syllable words. The pupils were given two tests. One required them to repeat words they heard on a recording (of a native speaker) played to them; this test served to establish a baseline of pronunciation so the two experimental groups (who had not been exposed to English at the start of the study) could be compared to the control group (who had some exposure). The other test required children to say the words representing a set of pictures they were shown. No figures are shown for this at pretest as the experimental groups did not know the words at that point. Numerators vary because pupils could not name some of the pictures. For stress on two-syllable words, there is substantially better performance by the experimental groups on the picture naming tasks, and these gains are maintained during the school break.

While one might react with astonishment at such good results for the experimental groups and poor results for the control group, keep in mind that considerable research points to the superiority of prepuberty learners, particularly when it comes to phonology. The repeat-after test in fact shows that all children are very good mimics. The children in the control group were simply following the Thai-based (and incorrect) English stress patterns presented to them during their lessons. The children in the experimental groups had internalised something about the English

Table 11.1 Production accuracy in repeat-after tape and picture naming

	Two-syllable final stress (Hello and goodbye)			Two-syllable initial stress words (14–16 picture prompts)		
Group	Pretest	Posttest 1	Posttest 2	Pretest	Posttest 1	Posttest 2
Control repeat	13 % (8/60)	28 % (17/60)	16 % (10/60)	80 % (371/465)	88 % (421/474)	74 % (354/477)
Control picture	n/a	0 % (0/7)	0 % (0/17)	n/a	0 % (0/283)	0 % (0/333)
Aware repeat	15 % (7/46)	80 % (37/46)	85 % (39/46)	95 % (330/347)	96 % (352/367)	74 % (344/466)
Aware picture	n/a	100 % (23/23)	100 % (25/25)	n/a	88 % (114/129)	85 % (140/164)
Listen repeat	20 % (11/53)	96 % (51/53)	100 % (53/53)	94 % (392/414)	94 % (405/432)	92 % (403/431)
Listen picture	n/a	96 % (26/27)	97 % (33/34)	n/a	86 % (161/187)	82 % (155/189)

phonology from their exposure to native-accented English. Granted, the children were focusing entirely on learning words (and social expressions) for 20 minutes every day for 4 weeks. They received a considerable amount of input that served to demonstrate the stress patterns (and syllable structure) of English. Moreover, there was no difference between the awareness group and the listening-only group. Children are able to produce target-like stress in English simply through listening and repeating. In current phonological theory, we could frame nonacquisition by the control group as compared with acquisition by the treatment groups in terms of the constraint ranking of Optimality Theory/OT (Prince and Smolenksy 2004). OT does away with the rules that have dominated thinking in generative phonology since at least the 1960s (Chomsky and Halle 1968) and replaces these with constraints whose ordering or ranking is specific to a given language. The constraint entailing the assignment of (primary) stress which is based on weight is ranked high for English, whereas in Thai it is ranked low, and stress based on position is ranked high. OT assumes that learners have access to these constraints across the lifespan, and acquisition of the phonology of a second language acquisition is then a matter of re-ranking this universal set of constraints.

11.5 Considering Other Factors

We now turn to several factors that lie outside of the phonology-internal factors that we have considered thus far. These are factors that need to be considered in the primary school classroom. The first factor is exposure to written or orthographic input. The second is identity.

11.5.1 Orthographic Input

The older the learner, the more likely it is that he or she will receive the majority of the input in written form, particularly in the second language classroom. What we will refer to as orthographic input (OI) is an understudied aspect of L2 phonology. It is, however, possible that it is the major source of differences in outcome for younger and older L2 learners. Consider claims about the critical period. Patkowski's (1990) study is typical of many in its consideration of immigrants with at least 5 years' residence who had arrived in the target language country either before or after puberty. In this study, Patkowski concluded that 15 was the cut-off point for guaranteed success in acquiring near-native L2 phonology. However, Long (1990) proposed that the critical period for phonology begins to close much earlier, at age 6. Without considerable further research, we cannot know the full extent of the role OI plays, but it is perhaps not a coincidence that the critical period for phonology seems to close just as children's literacy is becoming a major focus in school.

In the second language classroom, the learner receives OI from textbooks and through what the teacher writes on the board, and depending on the age of the learners, lessons on pronunciation might revolve around learning to read the L2 with a good accent. There may be considerable OI without accompaniment of aural input. Why is this problematic? Literacy typically follows rather than precedes establishment of phonological competence, and if one wishes to take advantage of the continued operation of the same phonological mechanisms responsible for acquisition of a first language, it makes sense to help learners follow the same sequence of development as children learning their first language, namely, acquisition of phonology before reading.

Let us look at two cases in which OI has been found to explain age differences, on the one hand, and to account for transfer, on the other.

11.5.1.1 Syllable Structure and OI

An unsettled issue regarding interlanguage syllable simplification strategies attested in various studies is the L2 learner's preference for insertion of a vowel over deletion of a consonant. If we want to conclude that L2 learners make use of the same mechanisms as young L1 children do, this is problematic because children's early nonadult phonologies overwhelmingly involve deletion (see e.g. Weinberger 1988). On the other hand, insertion of a vowel is well attested in L2 acquisition and may even increase with age; see Riney's (1990) study of younger and older Vietnamese learners of English.

When looking at the L2 development of syllable structure, we attempt to determine the role played by the learner's L1 knowledge and the role played by internal phonological mechanisms, and the studies discussed above showed that learners' interlanguage phonologies often resemble young children's nonadult phonologies in terms of how universals influence their nontarget production. Why do L2 learners insert or add a vowel? Young-Scholten et al. consider why this syllable simplification strategy might be more common for L2 learners (particularly older L2

learners), and they propose that it is the influence of OI. They set out to examine whether seeing words written during the process of initial exposure to a second language would prompt learners to insert vowels rather than omit consonants. They gave 24 English-speaking 13- and 14-year-olds a set of 18 Polish words to listen to and learn, with the aid of pictures. One subgroup saw only the pictures during listening, and a second subgroup saw the pictures with words written underneath in Polish orthography. Polish was selected due to its relatively complex syllable structure; it allows more combinations of consonants in syllable onsets and codas than English does. When tested on their knowledge of the 18 words, as predicted, the study participants who saw the words written inserted vowels more than those who only saw the pictures. Young-Scholten et al. interpreted this as the function of OI in enabling learners to form representations of Polish words that included the consonants. Vowels were then inserted to bring the Polish syllables into conformity with what English allows. Young-Scholten et al. speculate that it is likely that the high rate of vowel insertion frequently observed in older L2 learners is simply a result of having seen words written during learning.

11.5.1.2 Phonemes and OI

Most studies that mention orthography have noted in passing how it might influence the acquisition of segmental phonology. The – surprisingly – few studies which have focused entirely on the role of OI have usually looked at its influence in the perception and production of segments. A very recent study is Rafat (2011), who investigated transfer of grapheme–phoneme correspondence (connecting a letter/letters to phonemic representation, i.e. ‘s’ to /s/ in English). Using much the same study design as Young-Scholten et al., she predicted that English-speaking learners of Spanish would transfer their English grapheme–phoneme correspondence rules to override the auditory input received when the same phoneme existed in both languages. Thus, the group exposed to pictures along with words written while listening to aural input in Spanish demonstrated more L1 transfer than the group who only saw the pictures while listening to the words. Rafat’s results present a slightly more involved picture, indicating the need for more research. There is particularly a need for studies of learners in the process of acquiring the L2. Her recommendation to teachers is that exposure to written text be delayed through use of a teaching method that prioritises listening over reading. Bassetti (2009) reports on a similar study of English-speaking learners of Mandarin whose segmental errors could be traced to their exposure to Roman-alphabet Pinyin.

11.5.2 Identity

In discussing the various factors that might contribute to success in the acquisition of the phonology of a second language, Setter and Jenkins (2005) point out that phonology more than any other aspect of language can identify us geographically,

socially and ethnically. Does identity apply to young learners? In Wode's (2009) study of children in English immersion schools in Germany, he detected an interesting pattern. The performance of 8-year-olds was completely native-like yet performance at 9 years old declined. Wode attributes this to students beginning to be able to converse in class at age 9 and turning into mutual models for each other. Once students became able to orient themselves to their peers, they did so.

Leung (2011, 2012) provides further such evidence. He examined the phonology of 51 Cantonese-speaking kindergarten and primary school children aged 4;6 to 6 years old who were learning English in Hong Kong. Half of the group had received/was still receiving the majority of their English input from Filipino housekeepers. Two listening tasks tapped learners' knowledge of the pronunciation of /p/, /t/, /k/, /f/ and /v/ in four varieties of English: American, British, Hong Kong and Filipino. All children responded similarly on the tasks to the first three accents, but the subgroup of 30 children with Filipino housekeepers outperformed the others in response to Filipino-accented English. This suggests that the children had come to internally represent aspects of Filipino English. However, these children did not display Filipino consonants in their production. Interestingly, verbal-guise task and focus group data from the children did not reveal negative attitudes towards this variety.

Taken together, these studies point to why Sumdangdej's treatment was so successful: he used recordings of children the same ages as the Thai school children in the study. With this in mind, we now turn to the question of whether young L2 learners require the same focus on form that seems to benefit older L2 learners.

11.6 Great Expectations for Young Learners

The studies referred to in the first part of this chapter point to convincing evidence for the continued operation across the lifespan of the same mechanisms children use to acquire their L1 phonology. That this holds for older learners means that it also does for younger learners. There is likely a range of as yet unknown differences between younger and older L2 learners, but it will take longitudinal studies which directly compare these two groups to uncover these differences, as called for in Young-Scholten (2011). There are additional, internal yet non-linguistic factors that may also play an important role in the acquisition of L2 phonology by both younger and older learners.

Discussion above has indicated that the classroom context does not invariably make best use of learners' innate predisposition to acquire an L2. Given the current international emphasis on primary foreign language teaching, it is fitting that our great expectations focus on what can be accomplished within the purported critical period when conditions are right, that is, for primary-level learners.

1. Acquisition of a second phonology is neither available to learners' nor teachers' conscious awareness or control.
2. Learners' nontarget forms are systematic and represent their internal processing of the input.

3. Learners can successfully process input without explicit instruction.
4. Orthography matters: literacy in the L2 should follow acquisition of phonology to reduce L1 influence.
5. Input matters: because learners will acquire what they are exposed to, they need to hear target language speakers.
6. Identity matters: learners will acquire peer-oriented accents and the input should therefore be from native L2 speakers their age.

With a wealth of sources of input now available to download from the Internet (particularly in audiovisual form), it is up to the teacher to make creative use of materials to ensure that prepuberty learners get ample exposure to the L2 and from speakers their own age. Such materials need to be used creatively to ensure they are simple enough for young learners to understand and enjoy.

References

Abrahamsson, N. 2003. Development and recoverability of L2 codas: A longitudinal study of Chinese-Swedish interphonology. *Studies in Second Language Acquisition* 25: 313–349.

Akita, M. 1998. *A longitudinal study of Japanese EFL learners' interlanguage phonology*. Paper presented at EUROSLA 8. Paris.

Archibald, J. 1992. Transfer of L2 parameter settings: Some empirical evidence from Polish metrics. *Canadian Journal of Linguistics* 37: 301–339.

Bassetti, B. 2009. Orthographic input and second language phonology. In *Input matters in SLA*, ed. T. Piske and M. Young-Scholten, 176–190. Bristol/Buffalo/Toronto: Multilingual Matters.

Best, C.T. 1995. A direct realist view of cross-language speech perception. In *Speech perception and linguistic experience*, ed. W. Strange, 171–204. Timonium: York Press.

Bongaerts, T. 1999. Ultimate attainment in L2 pronunciation: The case of very advanced late L2 learners. In *Second language acquisition and the critical period hypothesis*, ed. D. Birdsong, 133–159. London: Erlbaum.

Broselow, E. 1987. Non-obvious transfer: On predicting epenthesis errors. In *Interlanguage phonology*, ed. G. Ioup and S. Weinberger. Rowley: Newbury House.

Broselow, E., and D. Finer. 1991. Parameter setting and transfer in second language phonology and syntax. *Second Language Research* 7: 35–59.

Broselow, E., and H.-B. Park. 1995. Mora conservation in second language prosody. In *Phonological acquisition and phonological theory*, ed. J. Archibald, 151–168. Hillsdale: Lawrence Erlbaum Associates.

Brown, C., and J. Matthews. 1997. The role of feature geometry in the development of phonemic contrasts. In *Focus on phonological acquisition*, ed. S.J. Hannahs and M. Young-Scholten, 67–113. Amsterdam: Benjamins.

Carlisle, R. 1998. The acquisition of onsets in a markedness relationship: A longitudinal study. *Studies in Second Language Acquisition* 30: 245–260.

Chomsky, N., and M. Halle. 1968. *The sound pattern of English*. New York: Harper and Row.

Cutler, A. 1984. Stress and accent in language production and understanding. In *Intonation, accent and rhythm: Studies in discourse phonology*, ed. D. Gibbon and H. Richter, 77–90. Berlin/New York: de Gruyter.

Eckman, F. 1977. Markedness and the contrastive analysis hypothesis. *Language Learning* 27: 315–330.

Eckman, F. 1981. On the naturalness of interlanguage phonological rules. *Language Learning* 31: 195–216.

Eckman, F. 2008. Typological markedness and second language phonology. In *Phonology and second language acquisition*, ed. J.G.H. Edwards and M.L. Zampini. Amsterdam: Benjamins.
Eckman, F., and G. Iverson. 1997. Structure preservation in interlanguage phonology. In *Focus on phonological acquisition*, ed. S.J. Hannahs and M. Young-Scholten, 183–208. Amsterdam: Benjamins.
Edwards, J.G.H. 2006. *Acquiring a non-native phonology: Linguistic constraints and social barriers*. London: Continuum.
Escudero, P., and P. Boersma. 2004. Bridging the gap between L2 speech perception research and phonological theory. *Studies in Second Language Acquisition* 26: 551–585.
Fikkert, P. 1994. *On the acquisition of prosodic structure*. Amsterdam: Holland Institute of Generative Linguistics.
Flege, J.E. 1995. Second language speech learning. Findings and problems. In *Speech perception and linguistic experience*, ed. W. Strange, 233–273. Timonium: York Press.
Gut, U. 2009. *Non-native speech. A corpus-based analysis of phonological and phonetic properties of L2 English and German*. Frankfurt am Main: Peter Lang.
Hancin-Bhatt, B. 2008. Second language phonology in optimality theory. In *Phonology and second language acquisition*, ed. H.J. Edwards and M.L. Zampini, 117–146. Amsterdam: Benjamins.
Hayes-Harb, R., and K. Masuda. 2008. Development of the ability to lexically encode novel L2 phonemic contrasts. *Second Language Research* 24: 5–33.
Haznedar, B., and B.D. Schwartz. 1997. Are there optional infinitives in child L2 acquisition? In *Proceedings of the 21st annual Boston University conference on language development*, ed. E. Hughes, M. Hughes, and A. Greenhill, 257–268. Somerville: Cascadilla Press.
Herschensohn, J. 2007. *Language development and age*. Cambridge: Cambridge University Press.
Ioup, G., and S. Weinberger. 1987. *Interlanguage phonology*. Rowley: Newbury House.
Ioup, G., E. Boustagui, M. El Tigi, and M. Moselle. 1994. Reexamining the critical period hypothesis: A case study of successful adult SLA in a naturalistic environment. *Studies in Second Language Acquisition* 16: 73–98.
Jenkins, J. 2000. *The phonology of English as an international language*. Oxford: Oxford University Press.
Jenkins, J. 2002. A sociolinguistic based, empirically researched pronunciation syllabus for English as an international language. *Applied Linguistics* 23: 83–103.
Jusczyk, P. 1997. *The discovery of spoken language*. London: MIT Press.
Krashen, S. 1985. *The input hypothesis. Issues and implications*. London: Longman.
Kuhl, P., and P. Iverson. 1995. Linguistic experience and the "perceptual magnet effect". In *Speech perception and linguistic experience: Issues in cross-language research*, ed. W. Strange, 121–154. Timonium: York Press.
Lado, R. 1957. *Linguistics across cultures*. Ann Arbor: University of Michigan Press.
Lenneberg, E. 1967. *The biological foundations of language*. New York: Wiley.
Leopold, W. 1944. *Speech development of a bilingual child. A linguist's record. Sound learning in the first two years*. Evanston: Northwestern University Press.
Leung, A.H.-C. 2011. [fılıpıno] or [pılıpıno]? Children's L2 English acquisition under the influence of multiple varieties. *JSLS Conference Handbook* 89–92.
Leung, A.H.-C. 2012. Bad influence? An investigation into the purported negative influence of foreign domestic helpers on children's second language English acquisition. *Journal of Multilingual and Multicultural Development* 33(2): 133–148.
Lightbown, P. 1985. Great expectations. Second-language acquisition research and classroom teaching. *Applied Linguistics* 6(2): 173–189.
Long, M. 1990. Maturational constraints on language development. *Studies in Second Language Acquisition* 12: 251–285.
Major, R. 2008. Transfer in second language phonology: A review. In *Phonology and second language acquisition*, ed. H.J. Edwards and M.L. Zampini, 63–94. Amsterdam: Benjamins.

Moyer, A. 2009. Input as a critical means to an end. Quantity and quality of experience in L2 phonological attainment. In *Input matters in second language acquisition*, ed. T. Piske and M. Young-Scholten, 159–174. Bristol: Multilingual Matters.

Patkowski, M.S. 1990. Age and accent in a second language: A reply to James Emil Flege. *Applied Linguistics* 11: 73–89.

Prévost, P., and L. White. 2000. Missing surface inflection or impairment in second language acquisition? Evidence from tense and agreement. *Second Language Research* 16: 103–134.

Preyer, W. 1889. *The mind of the child*. New York: Appleton.

Prince, A., and P. Smolenksy. 2004. *Optimality theory: Constraint interaction in generative grammar*. Oxford: Blackwell.

Rafat, Y. 2011. *Orthography-induced transfer in the production of adult novice English speaking learners of Spanish*. PhD dissertation, University of Toronto.

Riney, T. 1990. Age and open syllable production in interlanguage phonology. In *Proceedings of the 10th meeting of the Second Language Research Forum. Volume 2: Variability in second language acquisition*, ed. H. Burmeister and P. Rounds. Eugene: Department of Linguistics, University of Oregon.

Rogerson-Revell, P. 2011. *English phonology and pronunciation teaching*. London: Continuum.

Rose, Y. 2000. *Headedness and prosodic licensing in the first language acquisition of phonology*. PhD dissertation, McGill University.

Sabourin, L., C. Brien, and M.-C. Tremblay. 2013. Electrophysiology of second language processing: The past, present and future. In *Multiple perspectives on second language acquisition*, ed. M.d P. García Mayo, M.J. Gutierrez-Mangado, and M. Martínez Adrián, 221–242. Amsterdam: Benjamins.

Sato, C.J. 1984. Phonological processes in second language acquisition: Another look at interlanguage syllable structure. *Language Learning* 34: 43–57.

Scovel, T. 1981. The recognition of foreign accents in English and its implications for psycholinguistic theories of language acquisition. In *Proceedings of the 5th International Association of Applied Linguistics*, ed. J.-G. Savard and L. Laforge, 389–401. Montreal: Laval University Press.

Selkirk, E. 1984. *Phonology and syntax. The relation between sound and structure*. Cambridge, MA: MIT Press.

Setter, J., and J. Jenkins. 2005. Pronunciation. State-of-the-art review article. *Language Teaching* 38: 1–17.

Smith, N.V. 1973. *The acquisition of phonology: A case study*. Cambridge: Cambridge University Press.

Snow, C.E., and M. Hoefnagel-Höhle. 1982. Age differences in the pronunciation of foreign sounds. In *Child-adult differences in second language acquisition*, ed. S. Krashen, M. Long, and R. Scarcella. Rowley: Newbury House.

Sumdangdej, S. 2007. *Input and the acquisition of suprasegmental phonology in English by Thai school children*. PhD dissertation, Durham University.

Tropf, H. 1986. Sonority as a variability factor in second language phonology. In *Sound patterns in second language acquisition*, ed. A. James and J. Leather, 173–192. Dordrecht: Foris.

Weinberger, S. 1988. *Theoretical foundations of second language phonology*. PhD dissertation, University of Washington.

Winitz, H., B. Gillespie, and J. Starcev. 1995. The development of English speech patterns of a 7-year-old Polish-speaking child. *Journal of Psycholinguistic Research* 24: 117–143.

Wode, H. 1993. The development of phonological abilities. In *Progression and regression in language*, ed. K. Hyltenstam and A. Viberg, 415–438. Cambridge: Cambridge University Press.

Wode, H. 2009. Developing non-native pronunciation in immersion settings. In *Input matters in second language acquisition*, ed. T. Piske and M. Young-Scholten, 238–256. Bristol: Multilingual Matters.

Young-Scholten, M. 1995. The negative effects of 'positive' evidence on L2 phonology. In *The current state of interlanguage*, ed. L. Eubank, L. Selinker, and M. Sharwood Smith, 107–121. Amsterdam: Benjamins.

Young-Scholten, M. 2004. Prosodic constraints on allophonic distribution in adult L2 acquisition. *International Journal of Bilingualism* 8: 67–77.

Young-Scholten, M. 2011. Development in phonology. Another perspective on age. In *Achievements and perspectives in SLA of speech*, ed. K. Dziubalska-Kołaczyk, M. Wrembel, and M. Kul, 331–342. Berlin: Peter Lang.

Young-Scholten, M., and J. Archibald. 2000. Second language syllable structure. In *Second language acquisition and linguistic theory*, ed. J. Archibald, 64–101. Oxford: Blackwell.

Chapter 12
Applied Generative SLA: The Need for an Agenda and a Methodology

Melinda Whong

12.1 Introduction

This volume is based on the view that Generative Second Language Acquisition (GenSLA) can and should engage more with the field of language pedagogy. This chapter concludes the volume by suggesting ways in which GenSLA might do that. It is argued that GenSLA needs to better articulate the implications of research for language teaching. Going further, it is suggested that instruction should be included as one of the ranges of existing variables in GenSLA research. There is also potential for working with other research paradigms that are actively engaged in research in the language classroom, some of which are concerned with questions of second[1] language development and others which are more pedagogic in orientation. Within the latter, classroom research has explored questions such as the role of motivation (e.g. Spolsky 2000; Dörnyei 2001) and identity (e.g. Block 2007) in language learning, as well as politically and ethically motivated research from a critical discourse perspective (e.g. Pennycook 1999). Important though this research is, it is seen as too far outside the scope of the kinds of questions being asked by GenSLA to allow for fruitful collaboration at this point. The more closely related line of research is work that can be labelled Instructed SLA, which investigates questions such as the effectiveness of different types of classroom interaction, including different types of corrective feedback (e.g. Mackey 2007), as well as questions of teaching such as the

[1] In this chapter, I abstract away from questions of bilingualism and multilingualism, using the term 'second' language to refer generally to language learning which is not a product of exposure and development from infancy.

M. Whong (✉)
Department of Linguistics and Phonetics, School of Modern Languages and Cultures, University of Leeds, Leeds, West Yorkshire, UK
e-mail: m.whong@leeds.ac.uk

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom*, Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3_12,

value of implicit vs. explicit grammar instruction (Norris and Ortega 2000). It will be argued here that this body of research offers much potential for collaboration with GenSLA.

There is also SLA research which directly challenges the GenSLA theoretical premise but which is not directly interested in questions of instruction. This SLA research argues that there is a fundamental difference (Bley-Vroman 1990) between child native and adult second language acquisition (e.g. Clahsen and Muysken 1996). Because this line of research is not interested in questions of classroom instruction, however, it will not be discussed in this chapter. While it may seem odd to language teaching professionals that different branches of SLA do not always work collaboratively, differences in theoretical premise can make this difficult. This is particularly true for Instructed SLA and GenSLA. To date, most Instructed SLA research is premised on functional or cognitive linguistic theory, with the aim not to further the claims of functional/cognitive research per se but to ask questions about classroom interaction and when doing so, to assume a functional or cognitive framework. Because the assumptions are different, the way of thinking about the research can also be different. In this chapter we will argue that despite differences in theoretical premise, there is scope for collaboration between Instructed and Generative SLA.

It is uncontroversial to say that every research paradigm has limits in terms of scope. This chapter recognises the current limits of GenSLA and argues that working in collaboration with researchers from different paradigms can inform research at the edges of those limits. The specific limit within GenSLA that is challenged in this chapter is the agenda which insists on *acquisition* as the only relevant question for SLA research. We will argue that the contributions of this volume point the way for a useful line of inquiry within GenSLA, one which investigates *learning* in addition to *acquisition*. In doing so, we will suggest an agenda which engages with Instructed SLA research, a discussion which will leave us with practical questions of research methodology. Before exploring questions of research, however, we will address the core assumption of this volume, which is that GenSLA can 'apply' existing findings to the language teaching context. Through applying existing research findings and better defining a research programme, we will be able to articulate an agenda for GenSLA in relation to the language classroom.

12.2 An Agenda

In saying that GenSLA should be engaged with cognate fields, there is no suggestion that GenSLA should abandon its existing research agenda, nor is there any suggestion that all SLA researchers in the generative tradition should make wholesale changes to their approach. Instead, the field is challenged to do two things: (i) add a more outward-facing perspective to its existing approach and (ii) reconsider its stated aims in relation to the core concepts of acquisition and learning. This section argues the first point by discussing how existing research can be 'applied' to the language teaching context. A call for GenSLA researchers to communicate their

findings is pointless, however, if teachers do not have the linguistic expertise to make sense of the findings. Thus, this section begins by showing how the broader generative paradigm has much to contribute to the professional development of language teachers, so that GenSLA findings can then be communicated. The second half of this section is then devoted to exploring ways in which GenSLA can better define its existing research agenda in order to address important questions of second language development. That will lead to questions of research methodology and engagement with research in Instructed SLA. We begin, however, with suggestions within the field of GenSLA.

12.2.1 Developing Teacher Expertise

As mentioned in the introductory chapter to this volume, there is a divide between formal linguistic theory as a field and language teaching practice. On the language teaching side, for a range of entirely legitimate reasons, there has been a move away from an overemphasis on the structures of language, placing meaning at the centre instead. Focus on meaning instead of a focus on forms (Long 1991) is very much in line with Communicative Language Teaching, the approach to language teaching which has been widely accepted within the language teaching profession for the last few decades (Richards and Rodgers 2001). More recently, there has been a second shift, at least within the academic discourse surrounding language teaching, to a more politicised stance of so-called critical pedagogy (Kumaravadivelu 2006), further developing earlier progressive movements which aim to empower students through education. While the shifts from form to meaning to critical pedagogy are not unimportant or unneeded, of concern is the potential decline of linguistic expertise among professionals whose core remit is to teach language. Lightbown points out that Communicative Language Teaching 'reflected a move away from linguistics as the main or only basis for deciding what the units of language teaching would be' (2000: 435). Whong (2013) agrees and cautions the field of language pedagogy not to move too far away from the study of language structure, further arguing that research in theoretical linguistics, in fact, supports Communicative Language Teaching as an approach.

The GenSLA paradigm is needed to develop teacher expertise by raising the level of understanding of language itself. Indeed, it should be uncontroversial to argue that language teaching professionals should be experts with a highly developed understanding of language, whether teachers or materials writers. In reality, however, there are many properties of language that do not find their way into the pedagogical grammar that form the basis of most textbooks. This is shown by Stringer and by Snape and Yusa for English, Kizu for Japanese and Bruhn de Garavito for Spanish (all this volume). Knowing the properties of the language one is teaching is especially needed for linguistic subtleties that are known to cause persistent difficulty for learners. In addition to the chapters just mentioned, consider the research discussed by Hirakawa (Chap. 7, this volume) on the difference between

unergative/unaccusative intransitive verbs. Not only does this distinction provide a higher level of understanding of the properties of intransitive verbs, Hirakawa shows how it has implications for the development of learner language as learners tend to erroneously passivise unaccusative verbs in a way that does not occur with unergative verbs. Just knowing this difference is informative for knowing what to teach (and what not to teach), but Hirakawa's study does more. By showing that learners can be taught to overcome this error, she erases any doubt that knowing the particular properties of language is important for language teaching.

In addition to raising the understanding of language, the GenSLA paradigm provides a useful approach to language, which can, in turn, provide a basis for decision making in the classroom in order to better facilitate language development. Linguistic training, for example, can be a useful tool for teachers as even teachers with a higher degree in linguistics are likely to encounter questions from learners which are not easily answered. When faced with exceptions or tricky questions, a well-trained teacher will be able to apply linguistic method, devising examples or collecting examples using corpora, and analysing distributional properties in order to work out patterns of use for the linguistic property in question. Linguistic training also ensures that teachers know the difference between descriptive and prescriptive grammars. While adherence to a prescriptive grammar may be appropriate in a context of formal education and formal assessment, as is typical in a foreign language context, teachers will find a descriptive grammar useful when teaching in a second language context in which students need to develop the ability to use informal registers and to function among speakers with local dialects. In this way, linguistics is very much in line with progressive trends in education which recognise the full range of registers and dialects that constitute knowing a language.

Most fundamentally, however, decades of research in theoretical linguistics have led to an understanding of language which should be considered core expertise and part of the pedagogical grammars known by all language teaching professionals. One obstacle to be overcome, however, is the fact that generative research is shrouded in abstract concepts and steeped in jargon. What is needed are applied generative voices that can convey the findings of linguistic research in ways that are accessible. This is necessary for raising awareness of the picture that is emerging which shows that language is a system that is made up of qualitatively different components within what has traditionally been understood to be the structures of language. The existence of different components may be of limited value to teaching professionals in and of itself, but the research showing differences in development between the different domains means such knowledge is crucial for questions of pedagogy.

In fact, the idea that there are qualitatively different aspects of language is not new. It is uncontroversial to say that a language has a sound system which abides by a set of constraints which differ from constraints within the grammatical system. There are accepted distinctions within the grammatical system as well. It has long been accepted, for example, that content words like *cat* are qualitatively different from grammatical words or morphemes, such as *the* or *-ed*. Moreover, different categories of words are known to play different roles in grammar and to cause

different kinds of challenges in the course of language acquisition. The contribution of the generative tradition is to recognise qualitative distinctions among the components of language structure. The traditional distinctions between syntax, phonology and semantics are maintained but are conceptualised as a computational component which interacts with pragmatics and discourse. Moreover, this interaction between components is now an active area of research. This interest in form and meaning in the generative framework holds much potential for language teaching as findings in recent research show that there are qualitative differences in language development that can be traced to the different components of language. Slabakova and García Mayo (Chap. 10, this volume), for example, show that linguistic phenomena that implicate the domain of pragmatics do not need explicit instruction as learners come to this knowledge when they learn the properties of associated lexical items. We further discuss the value of communicating GenSLA findings in the next section.

12.2.2 Communicating Findings

One aim of this volume and this chapter is to challenge more GenSLA researchers to take a further step in their research, to articulate the usefulness of SLA findings for the language classroom, with the contributions in this volume as evidence that GenSLA research is relevant to classroom teaching. Some chapters have presented large bodies of research on well-studied linguistic phenomena; Young-Scholten, for example, presents a comprehensive survey on phonology (Chap. 11, this volume) in an accessible and useful way. A call to communicate findings should not, however, be taken as a suggestion that such application has not occurred in the past. In fact, the field of applied linguistics grew out of attempts to do exactly this. It is unfortunate, however, that a large gap between Chomskyan linguistic theory and language teaching practice has developed in the last few decades (for more discussion, see Young-Scholten and Piske 2009; Whong 2011). We hope that this volume will foster more efforts to apply research from linguistics to the language classroom. GenSLA researchers are asked to continue the work of early applied linguists as this work was not only influential at the time but has had a lasting impact on our understanding of second language development. This includes the recognition of language effects (Weinreich 1953) and systematicity in L2 development (Corder 1967), leading to the notion of interlanguage (Selinker 1972), and early discussions of stages of development (Dulay and Burt 1974), all of which led to the contributions by Krashen (1977, 1985) who firmly established the importance of input for 'natural' acquisition within language teaching circles.

There have also been persistent voices who have kept the connection between theory and practice alive by articulating generalisations from linguistic SLA research, most notably Lightbown (1985, 2000, 2003), (Spada and Lightbown 1993) and more recently VanPatten and Williams (2007). Arguably, however, these contributions have been limited to fairly broad generalisations. With the growing volume of research in GenSLA, what is emerging is another broad generalisation but one

with potential for deriving more specific implications for the language classroom. This generalisation is the observation that different domains of language develop differently, a difference which is connected to qualitative differences between different aspects of language. The well-known difficulty that inflectional morphology poses for learners, for example, is now understood as a 'mapping problem' between features that instantiate grammatical meaning and the particular morphological forms in a particular language (Lardiere 2000). Another area which is currently receiving much attention in GenSLA is the question of 'interface' between components of language (White 2009). The interface hypothesis (Sorace and Serratrice 2009) posits that learners will have difficulty with aspects of language that implicate both 'internal' language components, such as syntax, and 'external' language components, for example, discourse. The chapters in this volume by Slabakova and García Mayo and by Valenzuela and MacCormack illustrate this line of research and explore the implications for the language classroom.

While the discovery of differences by linguistic component is a recently emerging finding, research at the core of the GenSLA paradigm can also lead to implications for language pedagogy. The essence of the generative agenda has been to understand what can be acquired naturalistically. Empirical study of the so-called poverty of the stimulus phenomena has found that linguistic phenomena to do with semantic interpretation, like scope and quantifiers (Chap. 8 by Gil, Marsden and Whong, this volume), can eventually be acquired. While these are important findings for the GenSLA theoretical paradigm, from a pedagogic point of view, they lead to two immediate questions. Firstly there is the question of whether features of language that can be acquired can also be learned. As some poverty of stimulus research such as research on quantifiers shows acquisition happening at relatively high levels of proficiency, it would be useful to know if learners could come to know these properties of language at earlier points in their development. Secondly, there is the question of whether those areas that seem impervious to acquisition can come to be known as a result of instruction. Both of these questions, however, raise the theoretical question of the relationships between acquisition and learning, a question we will explore in the next section.

A second core area of research within the GenSLA paradigm is the question of native language influence on the development of the second language. This question features in a number of chapters in this volume but is explored by Rankin in particular, who focuses on word order, arguing that when the particulars of the native language and second language come together in a way that presents ambiguity for learners, explicit teaching is needed because the input alone cannot provide the evidence needed for language development. Of course, in order to identify which areas of language are subject to persistent problems due to the native language, one needs to have a highly developed knowledge of the particulars of the language(s) of the learners one faces in the classroom. Nevertheless, this can also be seen as broader endorsement for explicit instruction in general.

In sum, there is a need for GenSLA researchers to communicate their findings for use by language teaching professionals. This can be done at the level of individual empirical studies and will gain validity when generalised over bodies of research.

Or it can be done through a meta-analysis of existing research. One very fruitful result that is clearly shown in this volume is the recognition that differences in types of linguistic knowledge develop differently. Knowing this is crucial not only for materials writers but for teachers when thinking about how to work with students as it can inform decisions about types of input and types of interaction in order to facilitate effective engagement with language.

12.2.3 Refining the Conceptual Basis for Generative Classroom Research

This section suggests that the GenSLA research paradigm would benefit from recognising the role of instruction, not to contradict current research agendas, but instead to augment the core generative agenda. From its inception GenSLA has sought to identify what can be acquired by second language learners. The acquisition question is central to theoretical debates within GenSLA, motivating attempts to identify the extent to which child and adult second language acquisition parallel native first language acquisition. This core question, however, can also provide a starting point for exploring the basic difference between learning that takes place in (most) second language contexts and native, first language acquisition, namely, the existence of instruction. The flip side of exploring what can be acquired is to identify what cannot be acquired. The first challenge is to take this further by asking how acquisition intersects with questions of what can be learned. Thus, one item for a generative classroom research agenda is to explore whether those features of language that cannot be acquired can be explicitly learned. A second is whether acquirable language can also be learned as a result of instruction, whether before or instead of waiting for natural acquisition to occur. All of this, of course, assumes a distinction between acquisition and learning, one which is generally assumed in the generative tradition but which deserves some attention given more recent developments in GenSLA.

With the core of the paradigm traditionally interested in questions of natural acquisition, the bulk of the research in GenSLA has focused on looking for evidence of universal constraints on development, along with the interplay between such constraints and the learner's native language grammar. While these are not unimportant questions, they represent a subset of the picture of second language development, as evidenced by the very large numbers of classroom-instructed learners all around the world. Moreover, even a cursory survey of GenSLA research reveals that for many empirical studies, research participants are in fact classroom learners, even though the research question itself generally has little or nothing to do with the potential effects of formal instruction. Thus, for reasons of research validity alone, the argument that instruction should be recognised as a research variable is an important one.

At a more fundamental level, however, is the question of learning in relation to acquisition, where the tradition within GenSLA is to hold fast to the concept of acquisition as distinct from learning. Within this distinction, there is the so-called

no-interface position, in which the two types of knowledge are distinct from one another (e.g. Schwartz 1993). This 'strong' position holds that learned knowledge is epistemologically distinct from acquired knowledge and further contends that learned knowledge cannot become acquired knowledge. This question is tied to the ideological stance that what is important to GenSLA is research on competence, not performance (for discussion, see Jordan 2004). The claim is that core linguistic competence is acquired while noncore properties are learned. The difficult limitation of this research paradigm is that in terms of research methodology, most research techniques are restricted to tapping competence through performance (Schütze 1996; Sorace 1996). While there have been useful advances in research methods mostly in the realm of psychometric testing, for much of GenSLA research, it remains difficult to make valid claims with regard to just competence.

This well-known methodological issue is not the main reason why GenSLA should include explicit instruction as a variable, however. Of more significance is the recognition that language is not restricted to the domain of core competence. While this has always been true, developments in generative linguistics now find researchers routinely investigating questions that go beyond the 'core' component of language. The aforementioned research in 'mapping' between meaning-based features and inflectional morphology and the very recent exploration of 'interfaces' reflect this development. The challenge being levied here is for GenSLA to return to the acquisition-learning divide as the other, more basic, 'interface' worth exploring; after all the earlier use of the word *interface* in GenSLA referred to this epistemological question. What is more, it is not uninteresting to ask if something is unacquirable, does this also mean that it is unknowable? In fact, a number of researchers in the generative tradition seem to assume an interaction between learned and acquired knowledge. In one recent example, fMRI technology is used to find support for acquired knowledge developing as a result of explicit teaching (Yusa et al. 2011). Yet what remains unspoken is an explicit discussion of the exact relationship between these different types of knowledge.

Outside the generative tradition, there are SLA researchers who take the so-called 'interface' position on the acquisition-learning relationship, supporting a position whereby L2 development is the result of a process in which consciously learned knowledge becomes automatic through practice (e.g. DeKeyser 1997; Ellis 1993). Reflecting the difference in theoretical paradigm, this line of inquiry does not accept an epistemological difference between acquired and learned knowledge. The third, middle-ground or 'weak-interface' position is exemplified in one recent model, the Modular On-line Growth and Use of Language model (Sharwood Smith 2004; Truscott and Sharwood Smith 2004), which retains a difference between acquired and learned knowledge but argues that both are implicated in second language grammar. If the assumption that GenSLA can and should be relevant to the language classroom is valid, then, in line with arguments of Carroll (2001), GenSLA researchers need to actively address these distinctions.

Within the Instructed SLA paradigm, there are researchers who do not commit themselves to one position or another in the acquisition-learning debate because they are less interested in psycholinguistic mechanisms in the brain and more

interested in the type of instruction provided to the learner, or the context in which the learner encounters language. Researchers in the field of Instructed SLA tend to use the labels 'implicit' and 'explicit', applying these labels to types of instruction, and, sometimes, to knowledge itself. In the Instructed paradigm, the labels 'acquisition' and 'learning' are often used interchangeably. That Instructed and GenSLA have developed separate research agendas means that there now exists a disconnect between research on 'implicit' and 'explicit' instruction, on the one hand, and research on 'acquired' knowledge, on the other. It remains to be established exactly what the relationship between the two may be and whether these differences are any more than differences in paradigm. If GenSLA is to add the question of learning to its agenda, it would do well to engage with existing research on the implicit-explicit distinction within the Instructed paradigm. This could be useful for clarifying the relationship between explicit-implicit instruction and learned-acquired knowledge.

There are a number of reasons why the time is right for GenSLA to engage with other approaches. As readily acknowledged (e.g. Slabakova 2008; Young-Scholten and Piske 2009, among others), GenSLA needs to move beyond its property-theoretic approach to address questions of transition as well. As language teaching is premised on facilitating development from one stage of language knowledge to another, the language classroom provides a natural place for asking questions of transition. That classroom learners are usually grouped by level is one reason why these learners already serve as the main source of data for GenSLA research, to say nothing of the pragmatic reality that language classrooms provide a venue where learners regularly gather and can be readily asked to participate in data collection tasks. In addition to moving beyond a property theory approach, it has also been noted that while GenSLA places much emphasis on input, little is known about the actual amounts of input second language learners get (Piske and Young-Scholten 2009: 13). Again, classrooms hold potential for exploring this important point.

Another reason why it is timely to promote engagement beyond generative theory is the interest within GenSLA to questions of interface between linguistic components. With wider interest in a fuller range of linguistic phenomena, this raises the question of whether acquisition is the appropriate concept to characterise second language development in these GenSLA studies. Moreover, until now, claims about difficulty or ease at the interface have been explored in theory-internal terms with discussion relevant to the property-theoretic research agenda. What remains to be addressed, however, is whether the interface between what is internal and what is external can also be seen as a transition-theoretic interface between what can be acquired and what can be learned.

To illustrate, let us take an uncontroversial example. Knowledge of a core syntactic property, such as head direction, would be assumed to be an outcome of acquisition, while knowledge of a peripheral lexical property, such as the meaning of the word *cat*, is assumed to require learning. But what if properties of language implicate both types of linguistic phenomena? Take the example of topic dislocation as discussed by Valenzuela and McCormack (Chap. 6, this volume). Is it more appropriate to refer to knowledge of this syntax-discourse phenomenon as acquired knowledge or as learned knowledge? Perhaps it is the case that such knowledge

implicates both acquisition and learning. If so, what is the relationship between these two? Is it that acquisition is the transitional process associated with internal properties while learning is the mechanism at play for external properties? While this could be seen as a question of labels, the fact that the generative tradition is premised on questions of acquisition means a clearer articulation is needed.

Before leaving this discussion, there is another potential 'interface' area which also merits mention. In the Instructed SLA literature, there is general acceptance that successful second language development requires both input and output (Swain 1985, 2005; Long 1981). While GenSLA emphasises input, there is nothing in the theory that requires output, but equally there is nothing to deem it not necessary either. There may be scope for exploring this question especially in research which takes an interest in processing. The chapter in this volume by Snape and Yusa may be one step in this direction. In their study they do not find evidence that their learners benefitted from instruction on the specific properties of articles in English. But they did find that learners improved their ability to perceive articles in the input. It may be that Snape and Yusa captured a first step in the efficacy of teaching – perception. It makes much intuitive sense that neither acquisition nor learning can occur if the form in question is not perceived. This processing approach may provide clearer guidance on when and how learners should be expected to respond to input and to produce output.

In this section we have begun to explore the conceptual basis for an agenda within GenSLA which includes classroom instruction as a variable worth researching. In doing so, we have suggested that GenSLA and Instructed SLA might look for common ground between research on learning-acquisition and research on explicit-implicit instruction. We remain hopeful that this is possible despite differences in theoretical premise; after all both paradigms remain committed to questions of second language development. Within GenSLA there is no reason why the heart of the generative agenda should not remain the question of what is acquired. But beyond this, it is a natural step to ask the additional question: what is learned? After all, if the concern of the language teacher is of any import at all, then what matters is whether explicit teaching can result in learners who know properties of language which enable them to function in the target language, whether learned or acquired. It would be remiss, however, to suggest there have been no attempts within GenSLA to engage with classroom learners. We turn to this and to more practical questions of classroom research in the next section.

12.2.4 Engaging in Classroom Research

One well-known attempt to engage with instruction was research by White (1991) on the development of adverb placement by French-speaking children acquiring English in Canada (see Rankin, Chap. 4, this volume, for more discussion). Within GenSLA, this is referred to as research on 'negative evidence'. Negative evidence research has not traditionally been an area of active research as questions of

instruction and learning have fallen outside the core remit of the GenSLA agenda. It is perhaps telling that even among SLA researchers, the definition of the term 'negative evidence' is somewhat problematic. The usual understanding of the term is to mean information about what is not possible in a language. Both the seminal study by White and most introductory SLA textbooks (e.g. Gass and Selinker 2008) tend to use this definition. However, as pointed out by Carroll (2001), this definition can include both metalinguistic explanations about incorrect forms and negative responses to nontarget-like production. Because of this distinction, Carroll refers to the latter as negative feedback. She then limits her definition of negative evidence to explanations about what is not possible in a language, further characterising these as 'representations which can be defined neither as an intake representation of a stimulus nor as a parse of a given bit of intake (since the string is not part of the language), but which nonetheless convey information about structures of the language to the acquisition mechanisms' (Carroll 2001: 18). Carroll goes on to discuss the need for a better understanding of the effect of information about what is not possible in a language on second language development. Stepping outside of GenSLA, researchers working in other frameworks will recognise this question of negative evidence as one of explicit grammar instruction. Echoing the previous section, what remains to be explored is how research on explicit instruction compares with the few examples of negative evidence in GenSLA research, in order to come to a better understanding of the effect of instruction on second language development.

Given the paucity of classroom research within GenSLA to date, there is much scope for collaboration with Instructed SLA. Instead of maintaining a distance because of paradigmatic differences, there are potential gains if those approaching the question of L2 development could begin to explore how their approaches come together. From the point of view of educators attempting to articulate theory into practice in teacher training contexts, there is much need for collaboration. The absence of connection between the two paradigms can lead to considerable lack of clarity and even confusion for teaching professionals eager to find a principled basis for their language teaching practices. While academic debate is healthy, an absence of dialogue is not. Arguably, the current gulf between the two paradigms makes the field of SLA, as broadly defined, incoherent, thereby limiting its credibility. If SLA researchers from one paradigm are not able to discuss findings with SLA researchers from another, this can reflect badly on the research findings themselves. While each SLA paradigm has tended to hold fast to its ideological stance, there are advantages to working across approaches, both for the advancement of research within paradigms and for the more external aim of finding practical value in research for the very large number of professionals engaged in the important activity of language teaching.

One positive example of the field coming together are existing attempts to articulate generalisations, such as those given by Lightbown. The body of SLA research taken as a whole seems to be able to provide support for the same set of generalisations across the ideological paradigms, despite differences in stance and labels. This is given explicit expression in the collection of papers in VanPatten and Williams

(2007). But broad generalisations are not enough. There are other areas in which the two traditions could benefit from each other. Take, for example, the existing research on the effectiveness of instruction. As shown in a carefully considered meta-analysis by Norris and Ortega (2000), on balance, explicit instruction shows more positive effects for L2 development than implicit instruction. Spada and Tomita (2010) take this further, asking whether explicit instruction is equally beneficial for simple and complex grammatical features. They note the problem of defining simplicity/complexity, as this term can be defined in terms of psycholinguistics, pedagogy or linguistics. They eventually settle on a linguistic definition which for them means the number of derivations associated with a particular form (2010: 269). Considering developments in generative linguistic theory, the approach would benefit from consideration of research findings in terms of the linguistic domains of syntax, morphology, pragmatics, the lexicon, etc. After all, if language develops differently by domain, it is problematic if a study on explicit instruction combines results, for example, from the teaching of articles, tense marking and subject-auxiliary inversion, as if these were equivalent in developmental terms.

Within Instructed SLA there are also large and growing bodies of research asking questions about interaction and negotiation of meaning (Keck et al. 2006), as well as research on the effects of different types of feedback (e.g. Russell and Spada 2006), with no reference to the different types of linguistic forms being researched. But usefulness is not limited to one direction. GenSLA, in return, would benefit from a field which has developed within the classroom setting. Even if GenSLA does not research effects of instruction, research that uses classroom learners as the source for data really should acknowledge the potential effects of instruction on the data, whether instruction is relevant to the theoretical premise of the research or not. For GenSLA researchers who do engage in classroom research, there is much to gain from Instructed SLA. As noted by others in this volume (e.g. Chap. 7 by Hirakawa and Chap. 8 by Gil et al.), attempts at classroom research pose a number of methodological challenges that can easily compromise the research. With a long tradition of classroom research, colleagues in Instructed SLA continue to find ways to address the many methodological challenges inherent to classroom research. GenSLA researchers planning to turn to classroom research would do well to learn from their colleagues.

Of course, a major challenge in collaborating with researchers outside of GenSLA is the problem of reconciling theoretical premises. One way forward, however, might be to concentrate on areas which have traditionally fallen outside the research paradigm. Recognising that GenSLA has been limited to certain core questions, we can ask how research at the boundaries of GenSLA relates to research outside those boundaries. Research at the 'interface' between syntax and pragmatics is already pushing at those boundaries. Arguably, the domain of the lexicon is another area where there is potential for collaboration with research from an alternative paradigm. While GenSLA has researched closed-class lexical items, research on open-class items has been much more limited and tends to be restricted to word-class type research, such as research on alternating verbs (e.g. Montrul 2000; Chap. 7 by Hirakawa, this volume) or adverbs (Chap. 5, Stringer, this volume). By

contrast, the relatively new field of cognitive linguistics has done much research on contentful open-class lexical items. (See, e.g. Bogaards and Laufer 2004; Lengyel and Navracsics 2007; Meara 2009.)

Open-class words, for generative research, are deemed for the most part to be relevant to 'meaning' and tend to be considered 'outside' the core component of grammar. Yet the most recent shift in generative linguistics to minimalism has meant a growing emphasis on the interaction between the lexicon and grammar with more and more interest in the exact properties of the lexicon. Yet, for principled theory-internal reasons, the vast majority of contentful lexical items are not being researched. The chapter by Slabakova and García Mayo (Chap 10, this volume) is one clear example of why lexical items deserve much more attention from GenSLA researchers. As there has been little research on open-class lexical items in the generative tradition, there is no reason why paradigmatic constraints could not be set aside in order for GenSLA to consider research on vocabulary and lexical processes which has been done within the cognitive framework. As no linguist would want to exclude open-class lexical items from what we understand to be language, this could lead to a more comprehensive understanding of a fuller range of language facts.

In short, there could be much mileage in collaboration between GenSLA and other approaches for developing the field of SLA as a whole. In the previous section, we began to explore areas of common interest between Instructed SLA and GenSLA. In this section we have identified a way forward between GenSLA and cognitive linguistic research. The broader aim is that beyond SLA, dialogue and perhaps collaboration between paradigms could have great impact on the field of language pedagogy, especially in areas of consensus, whether in terms of broad generalisations or, more hopefully, in terms of more specific implications for teaching. Regardless of whether collaboration with researchers in other paradigms is possible, however, we repeat the call for GenSLA to more actively engage with language pedagogy. Looking to the future, if a tradition of collaboration begins to emerge, more ambitious attempts to explore conflicting conceptualisations of language and underlying mental processes may also become possible.

12.3 Questions of Methodology

Any discussion of an agenda for research automatically brings to mind questions of an appropriate methodology. One way forward within GenSLA would be to build on the existing negative evidence research. Any such development, however, must address current methodological problems with this research. Common to all classroom research is the need for pretesting that can avoid any test effect. Also problematic is the reality of attrition of participant numbers, especially for any delayed posttesting. Other confounds result from the range of students in a class regardless of whether they are supposedly at the same level for the purposes of teaching. A range can exist in terms of overall proficiency; previous exposure to the language in

terms of quality, quantity, age, etc.; native language; and number of other languages spoken, not to mention more sociolinguistic variables such as interest and motivation. While these problems are inherent to any SLA study, of further concern for classroom research are questions of teaching. While it is clearly outside the scope of GenSLA to research methods of teaching, there is an inherent connection between types of input and teaching methodology. Thus, consideration of teaching method, especially in terms of type of input, does warrant attention. As a related point is the question of quantity; the amount of input again relates to the method of teaching.

Picking up on the discussion of the acquired-learned distinction, there are methodological questions of how to test for developments in knowledge, whether learned or acquired, assuming, as we have, that it is the responsibility of the SLA researcher to address the full range of L2 knowledge. If GenSLA wants to hold to a distinction between types of knowledge, it is important that the methodology used is one that is able to tap the type of knowledge being researched. In general it is assumed that on-line measures such as reaction time, eye tracking or other psycholinguistic measures have the potential to tap into subconscious knowledge, while most paper and pencil tests run the risk of eliciting deliberate, conscious knowledge. As mentioned above, the GenSLA reliance on grammaticality judgments has received healthy criticism (Schütze 1996; Sorace 1996). Equally, reliance on production data, as common in the Instructed SLA tradition, is inherently limited because it can only ever provide a subset of knowledge, without being able to show what a speaker is fully capable of. Also limited is the use of self-report techniques as they fail to account for language knowledge which is not subject to explicit awareness by the speaker.

Given the many methodological challenges facing all of the approaches to SLA, researchers would do well to learn from colleagues working in other frameworks as a starting point. GenSLA can learn from researchers from the Instructed SLA tradition who are already grappling with the methodological challenges of classroom research, while Instructed SLA, in turn, would benefit from experimental techniques developed by GenSLA to isolate particular linguistic variables in such a way that more precise attention is paid to the qualitative differences among language domains. Collaborative research will need to agree on aspects of language to investigate and find ways to frame research to account for contradictions in underlying theory. Some of the negative evidence research explored in this volume focused on the core of the generative agenda: poverty of the stimulus phenomena. Even if staying strictly within a generative framework, there are questions of when particular aspects of language can be acquired and the sequencing of L2 development, both of which hold potential for direct contribution to language pedagogy.

This latter line of inquiry may hold much promise given the extent to which GenSLA has begun to understand differences in L2 development by linguistic domain. With research showing functional morphology to be a 'bottleneck' for acquisition (Slabakova 2008), for example, it remains to be seen whether explicit teaching can overcome this challenge. This idea that some aspects of language develop before others contributes to the generalisation of natural stages in L2 development. With this in mind, it may prove fruitful for GenSLA research to test

the usefulness of teaching at the 'next' stage, in contrast with teaching either at the same stage or a number of steps beyond the current level. While this notion harkens back to Krashen's famous *i + 1* idea, perhaps developments in theoretical understandings of the complexity of language have reached a point where it is now possible to begin researching the feasibility of this intuitively appealing claim.

12.4 Conclusion

As the question of second language development is a complex and varied one, it is perhaps not surprising that the range of people involved in understanding it is also wide. While some are committed to researching its properties, others are more interesting in questions of teaching. And within these two broad perspectives lie a number of still unanswered questions that can be approached from a range of theoretical frameworks. For those who are interested in collaborative work, it will be helpful to keep reminding ourselves that the question of L2 development is of central concern for all. From this core meeting point, there is room for a full range of questions with exploration grounded in different paradigms. The potential gains that can emerge from an open dialogue across paradigms should provide the motivation to engage in collaborative work. This could lead not only to a fuller picture of L2 development but to more principled recommendations for the teaching of language and a greater understanding among language teaching professionals of the subject matter to which they have dedicated their careers.

This volume illustrates that implications for teaching can be drawn from theoretical research in the generative tradition, with suggestions in this chapter pointing a way forward in developing this kind of research. We hope that the work in this volume will inspire more GenSLA researchers to apply their results to language teaching and further suggest that the time is right to develop a new strand within applied linguistics: Applied Generative Second Language Acquisition.

References

Bley-Vroman, R. 1990. The logical problem of foreign language learning. *Linguistic Analysis* 20: 3–49.

Block, D. 2007. The rise of identity in SLA research, post. *The Modern Language Journal* 91: 863–876.

Bogaards, P., and B. Laufer (eds.). 2004. *Vocabulary in a second language: Selection, acquisition and testing*. Amsterdam: John Benjamins.

Carroll, S. 2001. *Input and Evidence: The raw material of second language acquisition*. Amsterdam: John Benjamins.

Clahsen, H., and P. Muysken. 1996. How adult second language learning differs from child first language development. *The Behavioral and Brain Sciences* 19: 721–723.

Corder, P. 1967. The significance of learners' errors. *International Review of Applied Linguistics* 5: 161–169.
DeKeyser, R. 1997. Beyond explicit rule learning: Automatizing second language morphosyntax. *Studies in Second Language Acquisition* 19: 1–39.
Dörnyei, Z. 2001. *Teaching and researching motivation*. Harlow: Longman.
Dulay, H., and M. Burt. 1974. Natural sequences in child second language acquisition. *Language Learning* 24: 37–53.
Ellis, N. 1993. Rules and instances in foreign language learning: Interactions of implicit and explicit knowledge. *European Journal of Cognitive Psychology* 5: 289–319.
Gass, S., and L. Selinker. 2008. *Second language acquisition: An introduction*, 3rd ed. London: Routledge.
Jordan, G. 2004. *Theory construction in second language acquisition*. Amsterdam: John Benjamins.
Keck, C., G. Iberri-Shea, N. Tracy-Ventura, and S. Wa-Mbaleka. 2006. Investigating the empirical link between task-based interaction and acquisition: A meta-analysis. In *Synthesising research on language learning and teaching*, ed. J. Norris and L. Ortega, 91–132. Amsterdam: John Benjamins.
Krashen, S. 1977. Some issues relating to the Monitor Model. In *On TESOL '77*, ed. H. Brown, C. Yorio, and R. Crymes, 144–158. Washington, DC: TESOL.
Krashen, S. 1985. *The input hypothesis: Issues and implications*. London: Longman.
Kumaravadivelu, B. 2006. TESOL methods: Changing tracks, challenging trends. *TESOL Quarterly* 10: 59–81.
Lardiere, D. 2000. Mapping features to forms in second language acquisition. In *Second language acquisition and linguistic theory*, ed. J. Archibald, 102–129. Oxford: Blackwell.
Lengyel, Z., and J. Navracsics (eds.). 2007. *Second language lexical processes: Applied linguistics and psycholinguistic perspectives*. Clevedon: Multilingual Matters.
Lightbown, P. 1985. Great expectations: Second language acquisition research and classroom teaching. *Applied Linguistics* 6: 173–189.
Lightbown, P. 2000. Classroom research and second language teaching. *Applied Linguistics* 21: 431–462.
Lightbown, P. 2003. SLA research in the classroom/SLA research for the classroom. *Language Learning Journal* 28: 4–13.
Long, M. 1981. Input, interaction, and second-language acquisition. In *Native language and foreign language acquisition, Annals of the New York Academy of Science*, ed. H. Winitz, 259–278. New York: New York Academy of Sciences.
Long, M. 1991. Focus on form: A design feature in language teaching methodology. In *Foreign language research in cross-cultural perspective*, ed. K. de Bot, R.B. Ginsberg, and C. Kramsch, 39–52. Amsterdam: John Benjamins.
Mackey, A. 2007. *Conversational interaction in second language acquisition: A series of empirical studies*. Paris: Lavoisier.
Meara, P. 2009. *Connected words: Word associations and second language vocabulary acquisition*. Amsterdam: John Benjamins.
Montrul, S. 2000. Transitivity alternations in L2 acquisition: Toward a modular view of transfer. *Studies in Second Language Acquisition* 22: 229–273.
Norris, J., and L. Ortega. 2000. Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning* 50: 417–528.
Pennycook, A. 1999. Introduction: Critical approaches to TESOL. *TESOL Quarterly* 33: 329–348.
Piske, T., and M. Young-Scholten. 2009. *Input matters in SLA*. Bristol: Multilingual Matters.
Richards, J., and T. Rodgers. 2001. *Approaches and methods in language teaching*. Cambridge: Cambridge University Press.
Russell, J., and N. Spada. 2006. The effectiveness of corrective feedback for the acquisition of L2 grammar: A meta-analysis of the research. In *Synthesising research on language learning and teaching*, ed. J. Norris and L. Ortega, 133–164. Amsterdam: John Benjamins.

Schütze, C. 1996. *The empirical base of linguistics: Grammaticality judgments and linguistic methodology*. Chicago: University of Chicago Press.
Schwartz, B.D. 1993. On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition* 15: 147–163.
Selinker, L. 1972. Interlanguage. *International Review of Applied Linguistics* 10: 209–230.
Sharwood Smith, M. 2004. In two minds about grammar: On the interaction of linguistic and metalinguistic knowledge in performance. *Transactions of the Philological Society* 102: 255–280.
Slabakova, R. 2008. *Meaning in the second language*. Amsterdam: John Benjamins.
Sorace, A. 1996. The use of acceptability judgments in second language acquisition research. In *Handbook of second language acquisition*, ed. W. Ritchie and T. Bhatia, 375–409. San Diego: Academic.
Sorace, A., and L. Serratrice. 2009. Internal and external interfaces in bilingual language development: Beyond structural overlap. *International Journal of Bilingualism* 13: 1–16.
Spada, N., and P. Lightbown. 1993. Instruction and the development of questions in L2 classrooms. *Studies in Second Language Acquisition* 15: 205–224.
Spada, N., and Y. Tomita. 2010. Interactions between type of instruction and type of language feature: A meta-analysis. *Language Learning* 60: 263–308.
Spolsky, B. 2000. Anniversary article. Language motivation revisited. *Applied Linguistics* 21: 157–169.
Swain, M. 1985. Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In *Input and second language acquisition*, ed. S. Gass and C. Madden, 235–252. Rowley: Newbury House.
Swain, M. 2005. The output hypothesis: Theory and research'. In *Handbook on research in second language teaching and learning*, ed. E. Hinkel, 471–484. Mahwah: Lawrence Erlbaum.
Truscott, J., and M. Sharwood Smith. 2004. Acquisition by processing: A modular perspective on language development. *Bilingualism: Language and Cognition* 7: 1–20.
VanPatten, B., and J. Williams (eds.). 2007. *Theories in second language acquisition: An introduction*. Mahwah: Lawrence Erlbaum.
Weinreich, U. 1953. *Languages in contact*. The Hague: Mouton.
White, L. 1991. Adverb placement in second language acquisition: Some effects of positive and negative evidence in the classroom. *Second Language Research* 7: 133–161.
White, L. 2009. Grammatical theory: Interfaces and L2 knowledge. In *The new handbook of second language acquisition*, ed. W.C. Ritchie and T.K. Bhatia, 49–68. Bingley: Emerald.
Whong, M. 2011. *Language teaching: Linguistic theory in practice*. Edinburgh: Edinburgh University Press.
Whong, M. 2013. A linguistic perspective on communicative language teaching. *The Language Learning Journal* 41(1):115–128.
Young-Scholten, M., and T. Piske. 2009. Introduction. In *Input matters in SLA*, ed. T. Piske and M. Young-Scholten, 1–26. Bristol: Multilingual Matters.
Yusa, N., M. Koizumi, J. Kim, N. Kimura, S. Uchida, S. Yokoyama, N. Miura, R. Kawashima, and H. Hagiwara. 2011. Second-language instinct and instruction effects: Nature and nurture in second-language acquisition. *Journal of Cognitive Neuroscience* 23: 2716–2730.

Index

M. Whong et al. (eds.), *Universal Grammar and the Second Language Classroom,* Educational Linguistics 16, DOI 10.1007/978-94-007-6362-3,