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Mirosław Pawlak

Error Correction in the Foreign Language Classroom

Reconsidering the Issues

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Introduction

On the face of it, it might seem that everything there is to know about error correction, be it provided in the oral or written mode, should have already been uncovered and there should be a solid basis for feasible guidelines for teachers that would clearly tell them whether or not to react to a learner's ill-formed utterance or sentence in a particular context, when and how such feedback should be supplied, and who should be responsible for the correction. An assumption of this kind would be fully warranted in view of the fact that error treatment is of immediate concern and relevance to both teachers, theorists and researchers. Therefore, it constitutes an area where the interests of these groups of professionals could be reconciled and the existing gap between the practical world of the classroom, with all its exigencies and unpredictability, and the scientific world of the academia, with all its rigorous requirements, could successfully be bridged. When it comes to practitioners, the need to effectively respond to learners' errors can be regarded as part and parcel of their jobs, since inaccurate spoken and written output is bound to appear in huge quantities in most instructional settings and the ability to handle it in the most beneficial way is without doubt an important teaching skill. On the other hand, the investigation of the role of corrective feedback and the efficacy of specific corrective techniques is an extremely promising line of empirical inquiry, mainly because it is a fertile testing ground for verifying the theoretical claims regarding the overall contribution of form-focused instruction, the value of explicit and implicit techniques, the utility of input-based and output-oriented options, the need for ensuring learner engagement, or the challenge of creating optimal relevance during language lessons.

In reality, however, the belief that the area of corrective feedback no longer holds any secrets since all its aspects have been thoroughly researched and teachers are well prepared to dispense it, could not be further from the truth, as is evidenced by even a cursory overview of the relevant literature. In the first place, the issue of error correction is not usually accorded much space in popular methodology coursebooks for prospective and practicing teachers, and when relevant chapters or sections do appear, it is typically touched upon from a very general perspective without recognition that it is an integral part of the process of teaching language forms. Second, although the amount of research into the contribution of corrective feedback, particularly such drawing upon Long's (1996) idea of

focus on form, is indeed overwhelming, which is visible in the numerous papers devoted to this topic appearing in refereed journals and edited collections, there are few, if any, book-length publications that would attempt to offer a comprehensive account of this fascinating domain, especially such that would cover both oral and written correction and treat the insights stemming from theoretical positions and research findings as a basis for making concrete, sound, practicable and context-sensitive recommendations for everyday classroom practice. This comment applies in equal measure to the Polish context, where the pertinent monographs are those by Arabski (1979) and Zybert (1999), as well as the international arena, where the publications by Edge (1989), Bartram and Walton (1991), James (1998), Sheen (2010b), and Mackey (2012) can be found. The problem is, however, that while these volumes have considerably contributed to extending our knowledge base, some of them are somewhat dated and cannot possibly give justice to the latest developments in the field of research on corrective feedback, others focus more on the nature of error and its role in the process of interlanguage development than the treatment of incorrect forms, and others are yet purely pedagogically oriented, sometimes to the point of oversimplification. In addition, some of these books are limited to the discussion of oral corrective feedback, often from a very specific theoretical perspective, or dismally fail to adequately explore the possible teaching implications as well as to point to directions for future empirical investigations. This unfortunate paucity of relevant publications is highly disconcerting as it leads to insufficient dissemination of the latest research findings in a manner that would be approachable to teachers, which, in turn, results in misconceptions concerning the need for corrective feedback and the ways in which it should most profitably be provided.

The main aim of this work is to fill the existing gap and dispel some of the myths surrounding the place of oral and written error correction in language education by providing an exhaustive and up-to-date account of issues involved in this area, taking the stance that the provision of corrective feedback constitutes an integral part of form-focused instruction. This account places an equal emphasis on the relevant theoretical claims, the most recent research findings and everyday pedagogical concerns, particularly as they apply to the teaching of additional languages in the foreign language setting, where the amount of in- and out-of-class exposure is still restricted. To this end, the book consists of four chapters, each dealing with a different aspect of oral and written error correction, but also related to the remaining ones, thereby testifying to the acute need to forge links between theory, research and pedagogy with respect to this crucial domain. Chapter 1, which is meant as an overview of the key issues related to corrective feedback, focuses on the definitions of error and error correction adopted for the purpose of this work, the importance of error correction in the language classroom, the evolution that the perceptions of its contributions to language learning have undergone over time, the vital distinctions between explicit and implicit learning, knowledge, and instruction, and the place of error correction in classifications of techniques and procedures that can be employed in teaching language forms. Chapter 2, in turn, is intended to make a strong case for the facilitative role of the treatment

of learner errors in language pedagogy by considering the requirements for successful language acquisition, presenting the arguments that have been advanced against reactive negative evidence, and then offering a convincing rationale for the provision of corrective feedback on both theoretical, empirical and pedagogical grounds. The focus of attention in Chapter 3 is on the pedagogical choices that teachers have at their disposal when conducting oral and written error correction. It opens with the discussion of the potential contributions of pedagogical intervention of this kind to the development of explicit and implicit second language knowledge, which is followed by a comparison of the nature of corrective feedback in speaking and writing, the consideration of the role that error correction can play in the curriculum and lesson planning, and, finally, a thorough presentation of the decision-making process that practitioners are confronted with when responding to learners' errors, or the target, timing, manner and source of correction. A separate section is devoted to the discussion of the ways in which computers can be harnessed for the purpose of providing corrective feedback in recognition of the fact that the role of new technologies in this area is likely to grow significantly in the foreseeable future. In Chapter 4 the emphasis is shifted to empirical investigations of oral and written error correction by first outlining a framework for conducting and synthesizing such research, and subsequently discussing its methodology and main findings with respect to the effectiveness of specific feedback options, the influence of mediating variables, as well as the nature of learner engagement. Finally, the conclusion offers a summary of the most important points touched upon throughout the book, provides a set of pedagogical proposals and considers the possible goals of future research endeavors and the ways in which these can most effectively be pursued.

Several important clarifications are also in order with respect to the title of the present volume, the terminology it employs, and the audiences for which it is intended. Although this issue is considered at greater length in Chapter 1 it should be explained at this point that the term *error* is used here in a very general sense to refer to any infelicitous language use and is thus regarded as a synonym of the term *mistake*, while the term *error correction* is applied in the same sense as *corrective feedback* as well as a number of other expressions that can be drawn upon to describe teachers' response to learners' inaccurate spoken and written output. Another qualification is that while the book is primarily aimed to enhance the effectiveness of teachers' corrective practices in the foreign language context, the terms *foreign* and *second* are used interchangeably unless explicitly stated otherwise, and the studies invoked in the four chapters have been conducted in very different instructional settings. By the same token, no theoretical undertones are intended through the use of the terms *acquisition* and *learning*, with the exception of cases in which they are discussed within the framework of Krashen's (1981, 1982, 1985) Monitor Model. It should also be emphasized that the phrase *foreign language classroom*, as it is used in the title, should not be understood literally as the physical space in which lessons are conducted, but, rather, interpreted more metaphorically, as describing the whole process of language education. In effect, the concept of error correction is not meant to be confined only to situations in

which teachers respond to learners' inaccurate language use in speech or writing in the course of classroom interaction, but also includes situations in which such feedback is delivered at a later time, as is typically the case with the marking of written assignments, or it is mediated through the use of technology, as when teachers and learners communicate with the help of computer software. Finally, as regards the potential recipients of this book, it is envisaged that it will be of relevance and significance not only to specialists in the field of second language acquisition, but also to graduate and doctoral students carrying out research in the area of form-focused instruction and error correction. Many parts of this volume, particularly the discussion of pedagogical options included in Chapter 3 will also be of considerable interest and utility to teachers of foreign languages at different educational levels, wishing to augment the quality and efficacy of the oral and written corrective feedback they provide on their learners' inaccurate language use.

Chapter 1
Error Correction as an Option in Form-Focused Instruction

1.1 Introduction

All too often error correction is perceived as an isolated phenomenon that just happens in the classroom because learners are bound to produce inaccurate language forms and teachers have to deal with them in one way or another, as it is part of their job. Such an approach is visible not only in the majority of textbooks intended for prospective and practicing foreign language teachers, which, incidentally, deal with the provision of corrective feedback when discussing teaching different skills and subsystems rather than address it in its own right, but also in the few publications devoted solely to this issue. Hedge (2000), for example, mentions correction in chapters focusing on speaking and writing skills, and comments with reference to the former that "[f]or learners, classroom error correction is part of a wider process of recognizing and understanding their errors and then having opportunities to try and try again (…)" (2000, p. 292). A very similar solution is adopted by Brown (2001), who additionally considers the role of error treatment in grammar instruction, and Harmer (2007a), while Johnson (2001) chooses to ignore this important issue altogether, providing instead an account of how learners' errors can contribute to the process of language acquisition. A more detailed discussion of corrective feedback can be found in Cook (2008) and Ortega (2009a), both of whom view it mainly from the perspective of interactionist approaches and negotiation of form and meaning, and Harmer (2007b), who includes an entire chapter devoted to mistakes and feedback in the latest edition of his popular guidebook for teachers of English. However, he is also mostly interested in the treatment of spoken and written errors, and views feedback globally as "(…) a crucial part of the learning process" (2007b, p. 137). The assumption that error correction constitutes a general aspect of language teaching also resonates in full-length books authored by Edge (1989), and Bartram and Walton (1991), both of which are admittedly somewhat dated but still continue to serve as invaluable sources of reference. As is the case with most of the textbooks and guidebooks mentioned above, they discuss corrective feedback mainly in terms of speaking and writing,

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with the former being further divided into fluency-oriented and accuracy-based activities, a distinction that will figure prominently in the subsequent chapters of this book.

An undeniable merit of adopting such a broad perspective on the provision of corrective feedback and viewing it as an inevitable consequence of the frequent occurrence in classroom interaction of erroneous learner output, both in speech and writing, is the fact that it is close to the concerns of practitioners who are often at a loss as to whether and how react to the errors made by their students. Since inaccurate use of target language (TL) features occurs when learners are engaged in producing oral utterances or creating written texts in a more or less controlled manner, teachers without doubt appreciate being provided with concrete guidelines on what to do in very specific situations to achieve the dual goal of encouraging learners to participate in classroom exchanges as much as possible but ensuring at the same time that the language they produce is up to standard. On the other hand, however, the most serious weakness of such an approach is that it fails to link error correction with the instructional goals being pursued in a particular classroom and to demonstrate how it could most beneficially be utilized to assist the achievement of these goals. In other words, when the provision of corrective feedback is only considered in terms of teachers' reactions to what students do wrong as they speak and write, which may but do not have to take place, and which may address errors in a rather haphazard and random way, it is rather unlikely to contribute to greater mastery of the features which are currently the focus of pedagogic intervention. Moreover, it can even be pointless in the sense that it will divert learners' attention from what is being taught and it will also be insufficient to lead to the acquisition of the forms that are subject to treatment. For this reason, the present book is predicated on the assumption that the provision of corrective feedback is one of the options in *form-focused instruction* (FFI), understood broadly as any attempt on the part of the teacher to encourage learners to attend to, understand, and gain greater control over targeted language features, whether they are grammatical, lexical, phonological or pragmalinguistic in nature. As a result, similarly to other techniques and procedures used for this purpose, error correction can be planned or spontaneous, it can vary along numerous dimensions, and it can be applied with the purpose of developing both the knowledge of rules and the ability to use them in real-time communication. Apart from purely practical considerations, adopting such a view is fully warranted in light of the fact that the theoretical support for corrective feedback mainly derives from theories and hypotheses seeking to account for the contributions of form-focused instruction in general, and virtually all of the studies of error correction undertaken in recent years have been motivated by the broader question of how language forms can best be taught (see the following chapter for details).

The present chapter is intended to provide a brief overview of crucial issues connected with corrective feedback, conceptualized in the way outlined above. At the outset, an attempt will be made to define the concepts of *error* and *error correction*, as they are used throughout the present work, as well as to relate them to other terms commonly employed in the literature to refer to these two phenomena.

This will be followed by the discussion of the place of error correction in the language classroom, and the evolving views on its contribution to the process of language learning and teaching which have invariably been a reflection of the more general perspectives on the role of formal instruction in foreign language pedagogy. Subsequently, the pivotal distinctions between explicit and implicit learning, knowledge and instruction will be presented, which will serve as a point of reference for the discussion of the role of corrective feedback within different frameworks of methodological options in form-focused instruction.

1.2 Definitions, Scope and Terminology

Before taking a closer look at the role of error correction in teaching target language forms, it is imperative to explain how the concepts of *error* and *error correction* are understood in this work, delineate their scope and relate them to similar terms often used in the literature. In the first place, it should be emphasized that there is no agreement among specialists as to how the notion of *error* itself should be defined, and the definitions that have been put forward over the years and adopted as a point of reference in the analyses of learners' inaccurate production are far from satisfactory (cf. Allwright and Bailey 1991; James 1998; Ellis and Barkhuizen 2005; Roberts and Griffiths 2008). Perhaps the most common approach is to compare the utterances generated by learners with those that native speakers would produce in a similar situation, and to determine whether and to what extent the linguistic forms they contain deviate from the accepted, correct norm identified on that basis. Such an interpretation is visible in the definition proposed by Lennon (1991, p. 182), who describes an *error* as "[a] linguistic form or a combination of forms, which, in the same context and under similar conditions of production, would, in all likelihood, not be produced by the speakers' native speaker counterparts". James (1998, p. 64) also leans towards this characterization, pointing out that "[o]ne of the strengths of this definition is the way it sidesteps the problem of semantic intention and formal intention: what learners wanted to communicate, and the means they deployed to achieve that end". He also suggests that learners' ignorance of target language norms should be judged according to the criteria of *grammaticality* (i.e. adherence to pertinent rules), *acceptability* (i.e. suitability in a particular situational context), *correctness* (i.e. compliance with prescriptive normative standards), and *strangeness and infelicity* (i.e. purposeful breaches of the code and problems connected with pragmatics), considering the first of the four as being the safest and also the least problematic. Although it is logical and perhaps even necessary to describe errors in such a way for the purpose of conducting an in-depth analysis of learners' inaccurate utterances, the reference to the native speaker norm also suffers from a number of weaknesses. After all, there exist different varieties of the target language, as is the case with British and American English, for example, which may seem quite similar in terms of grammar, but differ a lot with respect to lexis and pronunciation.

In addition, there may exist different local dialects within each variety, the way individuals speak is bound to differ depending on such variables as age, gender, education, social status or context, and the members of some speech communities may deliberately choose not to adopt the standard variety. Finally, it must be kept in mind that the majority of teachers in foreign language contexts are not native speakers, with the effect that the model they provide for their learners is far from perfect. This, in turn, translates into the quality of the language generated by students, all the more so that some errors cannot be detected and therefore go uncorrected (cf. Allwright and Bailey 1991; Ellis and Barkhuizen 2005).

While the adherence to the target language norms is indispensible to ensure the requisite standards and is perceived as natural by most practitioners, the shortcomings mentioned above dictate that the definition of an error should be modified to some extent so that it will be more reflective of classroom reality. This need is acknowledged by George (1972), who argues that the main criterion in deciding whether or not a specific utterance is erroneous is the response on the part of the teacher because, in some situations, learners say or write things that would be regarded as grammatical, acceptable, correct and felicitous in naturalistic interaction, but are subject to corrective reactions since they are unexpected or breach the predetermined rules of classroom discourse (e.g. a failure to produce a complete sentence or speaking out of turn). Consequently, a reasonable solution seems to be the definition offered by Chaudron (1986), who views errors as: (1) linguistic forms or content that differ from native speaker norms or facts, and (2) any other behavior which is indicated by the teacher as needing improvement.[1] This characterization is broadly followed in the present work, with the important caveat that it is combined with the definition proposed by Lennon (1991) in accordance with the belief that, due to its greater clarity and precision, the latter is better suited to capture lack of adherence to native speaker norms.

Some important comments are also in order when it comes to the scope of errors as they are considered in the present book as well as terminological issues. In the first place, both spoken and written errors are considered which occur in the use of all the target language subsystems and thus concern a wide array of grammatical, lexical, phonological, discoursal or pragmalinguistic features. Such an approach follows the convention frequently adopted in the literature dealing with form-focused instruction (e.g. Doughty and Williams 1998a, b; Ellis 2001a; Ellis et al. 2002), but it has to be admitted that the discussion will in many cases primarily revolve around inaccuracies in the application of grammar at the level of syntax and morphology, for the simple reason that this domain has been the main object of theorizing and empirical investigations (cf. Ellis 2005a; Pawlak 2006a, 2007a; Ellis 2010a; Larsen-Freeman 2010a; Loewen 2011; Nassaji and Fotos 2011; Spada 2011). Since the book mainly concerns itself with the effectiveness

[1] The definition can be related to Edmondson's (1986) distinction between *T-errors* and *U-errors*, with the former describing discourse acts that the teacher views as erroneous and reacts to them explicitly or implicitly, and the latter referring to utterances that violate target language norms.

of error correction as it is applied in actual language teaching, it does not aspire to account for the outcomes of corrective reactions in terms of different sources and divisions of errors, which obviously does not rule out the possibility of occasional references to one specific category or another. This is because, while the distinctions between, say, *errors* and *mistakes* (Corder 1967), *intralingual* and *interlingual errors* (Richards 1971), *global and local errors* (Burt and Kiparsky 1972), or those included in the *surface structure taxonomy* (Dulay et al. 1982) may be worthy of consideration from a theoretical point of view, they are of little relevance to teachers who have to decide, often in a split second, whether, when and how to deal with an inaccurate form. By the same token, the terms *error* and *mistake* are treated as synonymous in the discussion to follow, with both of them being used to refer to the production of inaccurate forms in learners' oral and written output.

Many specialists are careful to distinguish between *error correction* and *feedback* in the language classroom on grounds that the latter is a much broader concept than the former and in fact encompasses it. Majer (2003, p. 287) writes, for example, that "[g]iving feedback is not tantamount to merely correcting errors. Error correction is part of language teaching, whereas feedback belongs in the domain of interaction. (…) Therefore all error correction is feedback, much as its actual realization may depend on a particular pedagogic goal (…)". This position is indeed justified when feedback is conceptualized as including different types of *repair* (van Lier 1988), encompassing both *negative* (i.e. correction) and *positive* (i.e. praise) reactions on the part of the teacher, and providing *cognitive* (i.e. relating to comprehension or correctness) or *affective* (i.e. concerning attitudes) information (cf. Vigil and Oller 1976). There are cases, however, in which the term *feedback* is employed almost in the same way as *correction*, but a particular author chooses to make a distinction between the two for reasons that may not be entirely clear. James (1998, p. 235), for example, describes correction as "(…) a reactive second move of an adjacency pair to a first speaker's or writer's utterance by someone who has made the judgment that all or part of that utterance is linguistically or factually wrong", but reserves the term *feedback* only for its subset, namely a situation in which a learner is merely informed that an error has been made and it is up to him or her to fix it. Larsen-Freeman (2003, p. 123), in turn, comments that "[c]ompared to the traditional term *error correction* (negative) feedback is broader in scope. It also has a less punitive connotation. And while error is by definition an externally norm-referenced notion, feedback (…) is not necessarily so". Detailed distinctions of this kind must surely be important for their proponents and they might even have a certain amount of explanatory power in some contexts, but they are tantamount to splitting hairs from a pedagogic point of view. This is because, when responding to an erroneous form in learners' speech or writing, teachers are without doubt more concerned with the consequences of their corrective reactions than such terminological issues that are of little relevance to classroom reality. Besides, the term *error correction* is so popular and so widely used that it is highly unlikely that it will ever be replaced with the term *feedback* in practitioners' descriptions of how they deal with learners' inaccurate output. For this reason, in this work, *error correction* is utilized

interchangeably with such terms as *corrective feedback*, *error treatment*, *corrective reactions*, *corrective moves*, and the like to indicate teachers' responses to incorrect language forms in their learners' speech or writing which are intended to provide them with negative evidence (see Sect. 2.2 for a detailed discussion of this concept). As such, it fits in with the definition provided by Sheen and Ellis (2011, p. 593), who explain in a recent state-of-the-art paper that "[c]orrective feedback (CF) refers to the feedback that learners receive on the linguistic errors they make in their oral or written production in a second language (L2)".

1.3 The Place of Error Correction in the Foreign Language Classroom

As most practitioners would probably attest, the provision of corrective feedback on learners' errors in speech and writing is one of the main hallmarks of foreign language teaching in the vast majority of instructional settings, and the non-interventionist or purely communicative approaches which emerged or gained popularity in the 1980s (e.g. immersion education, the Natural Approach, the procedural syllabus as a precursor of task-based learning) did little to change this situation because their impact on everyday pedagogy has been limited (cf. Fotos 1998, 2005). What this means in practice is that once learners walk into the classroom, they expect to be corrected on their inaccurate oral and written production in the hope of learning something from their errors, and most of them would perhaps be surprised and disappointed if such corrective feedback were to be withheld, a preference that has been consistently found in research (see Sect. 2.4.2.5 for discussion of the results of relevant studies). The same could be said about most teachers who, sometimes despite the advice offered in popular methodology coursebooks or the explicit recommendations issued by the institutions in which they happen to work, feel that reacting to errors is one of their main responsibilities. Irrespective of whether this conviction is rooted in their own experience as learners, principles derived from courses in language teaching methodology and second language acquisition (SLA), or it is reflective of their readiness to cater to learners' needs, it results in their attempts to ensure high quality of the language used in the classroom by providing corrective feedback, although its consistency, frequency, nature and timing may vary depending on a multitude of factors.

The ubiquity of error correction in the foreign language classroom should not come as a surprise in the light of the fact that much of the teacher-led interaction is dominated by a three phase discourse structure, known as the *IRF* (i.e. initiation—response—feedback) *sequence*, in which the teacher asks a question, the learner provides a response, and the teacher follows up with feedback, with the last part in many cases inevitably being corrective and evaluative in nature (cf. McTear 1975; Sinclair and Coulthard 1975; Majer 2003). As van Lier so aptly comments, "[t]here is probably nothing that symbolizes classroom discourse quite as much as this structure" (1996, p. 149), and, indeed, some estimates show (e.g. Wells 1983) that

it may account for up to 70 % of utterances during traditional language lessons where the main focus is on transmission of information rather than communicative language use. As a result, error correction is to a large extent an inherent part of this rigid discourse structure and, given the predetermined instructional goals that this interactional sequence is intended to fulfill (e.g. controlling the allocation of turns, informing students whether they are right or wrong), feedback of this kind is in most cases immediate, explicit and output-based, with learners being given a chance to self-correct or repeat the correct form after the teacher. Even when the patterns of interaction are somewhat relaxed, which may happen when the teacher opts for general rather than direct nomination, asks more challenging questions, and follows up on learners' answers by giving precedence to what van Lier labels (1996) *participation orientation* (i.e. such that maintains learners' attention and encourages them to produce output) rather than *assessment orientation* (i.e. such that is meant to evaluate the form and content of learners' utterances), the occurrence of correction is also seen as natural and inevitable, although it may be implicit and perhaps even delayed until the student finishes his or her utterance. Corrective feedback is also very likely to be supplied during activities aimed to foster meaningful communication in spite of the recommendations proffered by methodologists, often in a manner that can confuse the learner rather than aid interlanguage development. To be more precise, while postponing the correction until the end of the activity or even the following lesson, as some writers would have it (e.g. Edge 1989; Bartram and Walton 1991; Ur 1996; Harmer 2007b), is surely neither the only nor the best option, constantly interrupting students to address a wide array of inaccurate forms not only results in compromising the communicative nature of the task but also generates confusion and fails to lead to tangible learning gains. All of this demonstrates that error correction is part and parcel of classroom interaction and, rather than proscribe it, specialists should provide clear guidelines on how it can best be carried out.

Error correction is perhaps even more commonplace in the case of written production, both when it happens within *product-oriented approaches*, where the primary focus is on the quality of the final version of learners' work in terms of its structure and formal accuracy, and *process-oriented approaches*, in which the main emphasis is laid on the different stages of the act of composing as well as its recursive, exploratory and generative nature (cf. Matsuda and Silva 2010). This is because, in this case, in contrast to responding to inaccuracies in learners' oral utterances, there is no danger of getting in the way of meaning and message conveyance, disturbing their thought processes or triggering negative affective reactions, which may lead teachers to display much less restraint in indicating or fixing instances of erroneous use of the target language. Thus, they may quite indiscriminately apply red ink to students' paragraphs, compositions or essays, either only underlining the incorrect forms, using symbols to identify the nature of the errors, or immediately crossing them out and providing the correct version, sometimes also resorting to the use of metalinguistic comments (see Sect. 3.5.4.2 for a more detailed discussion of such techniques). Within the framework of the process approach, there is also a possibility of holding writing conferences during which

recurring errors are discussed with students and the necessary modifications are negotiated (e.g. Nassaji 2007a). Apart from such expert response, process-oriented writing instruction relies heavily upon peer feedback, which involves learners commenting on the different aspects of the subsequent drafts, often in collaboration with other students. Clearly, when teachers or peers only indicate the location or nature of the problem without actually providing the solution, learners are expected to engage in self-correction, the outcomes of which may be difficult to anticipate and sometimes fall far short of instructors' expectations. In all of these cases, the effectiveness of written corrective feedback hinges upon its focus, consistency, and the choice of techniques that would be most suitable in a particular situation. It is no secret, however, that, being confronted with hundreds of pieces of written work to mark in accordance with inflexible external examination criteria, teachers seldom give much considerations to these issues, with their corrections tending to be random, imprecise and uninformative, whereas the quality of peer response leaves much to be desired. Therefore, similarly to oral corrective feedback, there is an obvious need for concrete suggestions on how errors in learners' written output should be treated to trigger the learning of the targeted forms and ensure that the time and effort invested in correction are not wasted.

1.4 Changing Perspectives on the Role of Error Correction

As Russell (2009, p. 21) comments in her recent overview of the latest achievements in research on the role of corrective feedback, "[e]rror correction has a long and controversial history. (…) Whether and how to correct errors usually depends upon the methodological perspective to which a teacher ascribes". Such methodological perspectives, however, do not emerge out of nowhere or exist in a vacuum, and they have always been reflective of the more general shifts in foreign language pedagogy which, in turn, have been motivated by the development of new theoretical positions and the accumulation of research findings.

On the most general level, the importance given to the provision of corrective feedback can be viewed as a function of the considerable changes in the perceptions of the role of form-focused instruction in foreign language teaching and learning,[2] which is one more argument why it makes sense to discuss it primarily as one of the options in introducing and practicing target language features. When it comes to what Stern (1992) calls the *analytic strategy*, Long (1991) refers to as the *focus on form*s *approach*, and Doughty (1998) describes as *traditional language teaching*, it dominated second language education since its inception until more or less the beginnings of the 1970s. It was based on the assumption that "(…) language is a system of linguistic forms and functions and that classroom

[2] A more detailed discussion of the changing perspectives on form-focused instruction can be found in, among others, Doughty (1998), Long and Robinson (1998), Hinkel and Fotos (2002), Pawlak (2006a), Bade (2008) or Larsen-Freeman and DeCarrico (2010).

learners, especially adults, can profit from studying these linguistic features explicitly", which was closely related to the belief that "(…) learners, presented with a sequence of forms and functions planned in advance and presented one by one by the teacher or through materials, will eventually build up a complete linguistic repertoire" (Doughty 1998, p. 129). Such a conceptualization of the learning process provided a justification for the use of error correction which naturally had to complement the techniques and procedures employed for introducing and practicing the linguistic features included in the syllabus, whether it was grammatical, lexical or notional-functional in nature. This approach then came under severe criticism on practical, theoretical and empirical grounds as it became clear that learners could not use the forms and functions taught in the classroom in authentic communication, a manifestation of the so-called inert *knowledge problem* (Larsen-Freeman 2003). In addition, theoretical positions began to appear which called into question the utility of formal instruction, such as Krashen's (1981, 1982) Monitor Model, and copious empirical evidence emerged testifying to the existence of developmental trajectories in second language acquisition which were largely impervious to pedagogic intervention (cf. Larsen-Freeman and Long 1991; Ellis 2008; Gass and Selinker 2008; Ortega 2009a), as well as the fact that "(…) learning is a gradual process involving the mapping of form, meaning, and use; structures do not spring forth in learners' interlanguage fully developed and error-free" (Larsen-Freeman 2001, p. 255).

The logical consequence of all of these developments was the advocacy of the *zero grammar option* (e.g. Krashen 1982; Prabhu 1987), according to which language instruction should be entirely meaning-focused and classroom interaction should mirror typical patterns of naturalistic discourse as much as possible. This was obviously tantamount to the rejection of formal instruction as a viable pedagogical option, which meant that there was also little or no place for the correction of learners' errors. The purely communicative approaches drawing on this theoretical position not only had a limited impact on classroom reality in many parts of the world, but their value as such was soon to be reconsidered in reaction to research findings demonstrating that, on the one hand, exclusive focus on meaning is insufficient to lead to high levels of proficiency in the target language, and, on the other, form-focused instruction works and its effects are durable (Ellis 2001, 2002a, 2005a, 2008, 2010a; Pawlak 2006a; Nassaji and Fotos 2007, 2011; Larsen-Freeman 2010a; Loewen 2011; Spada 2011; Ur 2011). Consequently, the value of direct teaching of linguistic features was recognized once again and a quest for the most effective instructional options was initiated, particularly such that would enable practitioners to draw learners' attention to target language forms in the course of meaningful communication, which is in line with Long's (1991) *focus on form approach* (see Sect. 1.6). The provision of corrective feedback is clearly one of the most important techniques in which such a dual focus on form and meaning can be accomplished, with the effect that it has become one of the most promising and vibrant lines of inquiry in form-focused instruction and its adept use in the classroom is regarded as highly conducive to the mastery of the target language.

The two major shifts in perspective on the role corrective feedback, closely connected with evolving views on the role of formal instruction in foreign language pedagogy, can also be related to very specific theoretical explanations of how languages are learnt, as represented by behaviorist, nativist, interactionist and skill-learning approaches (cf. Roberts and Griffiths 2008; Sheen 2010a).[3] According to behaviorists, language learning, similarly to other types of learning, involved the process of habit formation which proceeded thanks to the provision of external feedback, positive when the response was correct and desirable, and negative when it was not. Therefore, in order to ward off the damaging effects of the wrong habits on learning and to minimize the danger of fossilization, it was believed that errors should be avoided at all cost and, once they are made, they should be eradicated. To quote Brooks (1960, p. 56), "[l]ike sin, error is to be avoided and its influence overcome (…) the principal way of overcoming it is to shorten the time lapse between the incorrect response and a presentation once more of the correct model". Such a perspective on the occurrence of errors was drastically modified following Chomsky's (1959) attack on the main principles of behaviorism and the advent of his nativist theory, which posited that the ability to learn languages was innate and domain-specific. It postulated the existence of a human-specific biological endowment, known as the Language Acquisition Device (LAD) and, more recently, Universal Grammar (UG), which contains core principles and parameters variable across languages, and makes it possible for children to learn their mother tongue in spite of the fact that the input they are exposed to is impoverished, thereby overcoming the so-called *logical problem of language acquisition* (cf. Chomsky 1968, 1986). The corollary of this position was that what was needed for language development was positive evidence, or access to language data that could trigger the internal processing mechanisms, rather than negative evidence in the form of error correction, which was believed to be unavailable to first language learners (see Sect. 2.2 for a discussion of the role of the two types of evidence).[4]

When these tenets were extrapolated to the domain of second language acquisition and they became augmented by the findings of studies inspired by Interlanguage Theory (Selinker 1972), it somewhat inevitably had to lead to the adoption of the non-interventionist stance, with the effect that exposure to the target language and opportunities for its spontaneous use began to be seen as much more important than the correction of errors. This is evident in Krashen's (1981, 1982) Monitor Model, which emphasized the superior role of subconscious

[3] Theoretical justifications for the provision of corrective feedback are discussed in detail in Chap. 2 of this work.

[4] There is empirical evidence that although child-directed speech (i.e. caretakers' interactions with young children) does not usually contain explicit corrective moves, erroneous utterances tend to be reformulated into expanded and grammatical ones, which can be considered as one form of implicit corrective feedback (i.e. recasts) (cf. Sokolov and Snow 1994). These findings led Saxton (1997) to propose the Direct Contrast Hypothesis, according to which children may perceive reformulations as a correct alternative to their output and the fact that their attention is drawn to this conflict may be a stimulus for language development.

acquisition over conscious learning, as well as Creative Construction Theory (Burt and Dulay 1980), which, drawing on Corder's (1967) idea of a *built-in syllabus*, posited that the mental representations of the TL could be inferred from the input, and not taught. Another crucial change with respect to the role of error correction was heralded by the advent of interactionist theories, both psycholinguistic and sociolinguistic in nature, such as the Interaction Hypothesis (Long 1983, 1996), the Output Hypothesis (Swain 1985, 1995), or Sociocultural Theory (Lantolf 2006; Lantolf and Thorne 2007), since all of them perceive the provision of corrective feedback as conducive to second language acquisition, either because it enhances noticing, triggers output modifications, or contributes to the achievement of self-regulation. Its facilitative role is also recognized by Skill-Learning Theory (DeKeyser 1998, 2001), according to which it aids the transformation of declarative knowledge into procedural knowledge and facilitates the process of the automatization of the latter.

All these changing perspectives and evolving theoretical positions naturally found their reflection in different language teaching methods and approaches which have been proposed over the years and have determined to a considerable extent everyday instructional practices in the foreign language classroom (Larsen-Freeman 2000; Brown 2001; Celce-Murcia 2001; Johnson 2001; Howatt 2004). Error correction was obviously regarded as extremely important in the Grammar Translation Method, which might have lacked sound theoretical foundations, but epitomizes without fail what was described at the beginning of this section as *traditional language teaching*. As Larsen-Freeman (2000, p. 19) remarks in her summary of the principles of this method, "[h]aving the students get the correct answer is considered very important. If students make errors or do not know the answer, the teacher supplies them with the correct answer". Even though it was based on the belief that second language learning should emulate as much as possible the learning of first languages and it laid emphasis on oral interaction, also the Direct Method attached considerable importance to correctness in the use of grammar or pronunciation, with the caveat that the learner was expected to fix the problems by himself or herself. Providing immediate corrective feedback on inaccurate target language production was also of utmost importance in the Audiolingual Approach, which drew upon the tenets of behaviorist learning theory and relied on the findings of Contrastive Analysis in choosing the linguistic features to be taught. Other early methods and approaches in which errors were responded to included the Cognitive Code Method as well as the humanistic approaches of the 1970s, namely the Silent Way, Suggestopedia, Community Language Learning and the Total Physical Response. What has to be emphasized, however, is that although error treatment did take place, the focus was not on so much on eliminating the inaccurate form as on exploiting its potential for the learning process by encouraging self-correction, and the act of indicating the error was performed in a non-threatening and positive manner. Among the methods and approaches in which error correction was shunned, it is worth mentioning the Cognitive Anti-Method (Newmark and Reibel 1968), early implementations of immersion programs (Snow 2001), the Natural Approach (Krashen and Terrell 1983), and the Communicational

Teaching Project (Prabhu 1987). The first of these was predicated on an extremely radical interpretation of nativist theory, the second represent content-based instruction and have been described by Krashen (1984) as communicative language teaching *par excellence*, whereas the remaining two were in line with the claims of the zero grammar option and rejected all manifestations of formal instruction. When it comes to contemporary foreign language pedagogy, most variants of communicative language teaching (Savignon 2005; Littlewood 2011), task-based teaching and learning (Ellis 2005a; Norris 2010; Robinson 2011), and content-based second language instruction (Lyster 2011) advocate the use of certain types of corrective feedback in certain circumstances, especially as a tool for integrating form and meaning, which testifies to their adherence to interactionist theories and Long's (1991) focus on form. Finally, error correction is also viewed as an integral element of postmethod pedagogy (Kumaravadivelu 2005) as long as reliance on it respects the basic parameters of particularity, practicality and possibility.

1.5 Explicit and Implicit Learning, Knowledge and Instruction

Before considering the role ascribed to corrective feedback in different taxonomies of form-focused instruction, it is warranted to take a closer look at the concepts of *explicit* and *implicit learning*, *knowledge* and *instruction*, as understanding thereof is of crucial importance when discussing the types and potential effects of different types of pedagogic intervention. Another reason why it is imperative to examine these dichotomies in more detail is that some of them tend to be conflated or simply ignored in the literature, which only adds to confusion when it comes to explanations of how people gradually gain greater command of a foreign language. Thus, it is necessary to emphasize at the very outset that *linguistic knowledge*, which must be viewed in terms of a product, should be distinguished from the processes of its growth, which can be called *acquisition* or *learning*, use, which manifests itself in oral or written output, and facilitation of its development, which involves the application of various types of *instruction*.

When it comes to the first of these key distinctions, Hulstijn (2005, p. 131) describes it in the following way: "Explicit learning is input processing with the conscious intention to find out whether the input information contains regularities and, if so, to work out the concepts and rules with which these regularities can be captured. Implicit learning is input processing without such intention, taking place subconsciously". Whether second language learning can indeed occur without at least a certain degree of awareness is a matter of heated controversy among theorists and researchers. Schmidt (2001), for example, claims that language learning has to involve noticing as conscious attention to linguistic features in the input and although he does not entirely rule out the possibility of learning without intention and awareness, he maintains that is of little relevance to second language acquisition since such non-conscious registration is useful for well-known rather than

new information. Similar reservations have been voiced by DeKeyser (1998, 2003, 2010), who is skeptical about whether implicit learning of abstract structure can really happen, at least in the case of adults. As DeKeyser and Juffs (2005, p. 441) comment, "[a]lthough nobody has any doubts about the possibility of explicit learning, only about its usefulness, the situation for implicit learning is the other way around: Nobody doubts that implicitly acquired procedural knowledge would be useful; the main question is to what extent it exists". On the other hand, however, there are specialists who, drawing on the findings of research in cognitive psychology and the scant empirical evidence in the field of second language acquisition, arrive at the conclusion that learning without conscious attention can take place. This is visible in the pronouncement offered by J. N. Williams (2005, p. 298) on the basis of the results of his experiments that "[i]mplicit learning of form-meaning connections is possible, at least in principle", a position which is shared by N. Ellis (2005, p. 306), who makes the point that "the vast majority of our cognitive processing is unconscious". While both sides of the debate provide convincing arguments, the jury is still out as to whether mastery of an additional language can be achieved through both explicit and implicit learning, not least because the studies conducted thus far suffer from a number of methodological flaws (e.g. short duration, the measures used) (cf. Ellis 2009a). It is also clear that the effectiveness of two types of learning may be a function of a number of variables such as, for example, the complexity of the rule involved, age, proficiency level, aptitude, and the situational context (cf. DeKeyser 2003; Ellis 2009a; DeKeyser and Koeth 2011).

Logically, the processes of explicit learning and implicit learning should contribute to the development of *explicit knowledge* and *implicit knowledge*, respectively, which are also of pivotal importance to the field of second language acquisition and foreign language pedagogy. This is because, while the research conducted within the confines of the former has among its main aims defining and describing second language knowledge and determining the internal and external factors impinging upon its development, the findings of these studies are of great relevance to syllabus designers, coursebook writers, methodologists and practitioners who can use such insights to plan and implement pedagogical intervention that will best contribute to greater mastery of the target language (cf. Ellis 2005b; Hulstijn 2005). The distinction is made by the adherents of both major approaches to the nature of linguistic representation, namely *nativism*, according to which its acquisition is enabled by the operation of a special biological capacity in the learner's mind, such as Universal Grammar (cf. Chomsky 1968; Gregg 2001), and *connectionism*, which posits that such representation results from exposure to input whose frequency leads to the strengthening or weakening of connections between neural networks in the human brain (cf. e.g. Rumelhart and McClelland 1986; N. Ellis 2003). The adherents of both of these theoretical positions concur that implicit knowledge is primary and it provides a basis for communicative language use, but they are in disagreement over the contribution of explicit knowledge, with generativists attributing to it only a marginal role and connectionists taking the stance that it can to some extent facilitate the process of language learning (cf. Ellis 2005b, 2009a). Moreover, the division of linguistic knowledge into these two

Table 1.1 The main characteristics of explicit and implicit linguistic knowledge (based on Ellis 2005b, 2009a)

Criterion	Explicit knowledge	Implicit knowledge
Awareness	Conscious	Tacit and intuitive
Type of knowledge	Declarative	Procedural
Systematicity	Imprecise and inaccurate	Variable but systematic
Accessibility	Controlled processing	Automatic processing
Conditions of use	Planning difficulty	Fluent performance
Self-report	Verbalizable	Nonverbalizable
Learnability	No limitations related to age or processing	Limited by age and processing constraints

basic types lies at the core of many prominent theories of second language acquisition, although the specific terminology may vary and their function may be seen somewhat differently. This is evident, for instance, in Bialystok's (1978) differentiation between *formal practice* and *functional practice*, the widely-known and highly influential dichotomy between *learned knowledge* and *acquired knowledge*, advocated by Krashen (1981, 1982), as well as the distinction between *declarative knowledge* and *procedural knowledge*, which is fundamental for the proponents of Skill-Learning Theory (Johnson 1996; DeKeyser 1998).

Table 1.1 presents the main criteria which can be used to differentiate between explicit and implicit knowledge, and the distinctive characteristics of these two types of representation corresponding to these criteria (cf. Ellis 2004a, 2005b, 2009a). Explicit knowledge is conscious and analyzed knowledge about language and its use, it constitutes part of declarative memory, and it includes grammatical, lexical, phonological, pragmatic and sociocritical features, which may be accompanied by the metalanguage needed to describe them. Such knowledge is often imprecise, inaccurate and inconsistent, its use requires ample time so learners can access the requisite rules, and thus it is difficult to utilize in spontaneous communication and tends to be drawn upon when the learner experiences difficulty in performing a given task. It is available for self-report when learners are requested to account for the application of a particular rule, with the caveat that such explanations do not have to rely on terminology, and its acquisition is not constrained by age-related factors posited by the Critical Period Hypothesis (cf. Singleton and Muñoz 2011), or the ability to perform syntactic operations needed to traverse developmental sequences, as postulated by the Teachability Hypothesis (cf. Pienemann 2007). By contrast, implicit knowledge is unconscious, tacit and intuitive, it consists of rules and fragments which have been proceduralized to such an extent that they are available for automatic processing and can be easily and rapidly called upon in unplanned performance. Such knowledge may be variable and fail to obey target language rules but it is also highly systematic in respecting the orders and sequences of acquisition, it cannot be verbalized without simultaneous formation of its explicit representation, and its successful development is limited by age and processing constraints.

It should be noted at this point that some specialists would probably take issue with some of these characteristics of the two types of linguistic representation. DeKeyser (2007a, b, 2010), for instance, is of the opinion that it is an oversimplification to treat explicit and declarative knowledge, on the one hand, and implicit and procedural knowledge, on the other, as identical. He makes his position clear in the following comment (DeKeyser 2010, p. 121):

> This distinction [declarative vs. procedural] is often equated with the explicit-implicit dichotomy, and the two pairs of concepts do overlap greatly, and can often be equated in certain contexts, but explicit is not exactly the same as declarative, and implicit not exactly the same as procedural. Declarative knowledge is not necessarily explicit, because it is not necessarily accessible to awareness (linguistic competence in the Chomskyan sense being a good example). On the other hand, procedural knowledge is not necessarily implicit, because it can be the result of proceduralization (and partial) automatization of declarative knowledge, and still allow or even require a certain degree of conscious access when being used. Nor is implicit knowledge necessarily procedural: knowledge of category prototypes, even including the knowledge of chunk strength involved in artificial grammar learning, may be implicit, but this implicit knowledge is neither declarative nor procedural (…).

Other controversial issues are connected with the extent to which implicit knowledge can be expected to develop in individuals who learn an additional language formally, as is the norm in the foreign language context, and whether explicit knowledge can instead be employed in spontaneous, unplanned real-time performance. DeKeyser and Juffs (2005) acknowledge that when learners successfully acquire implicit knowledge, this to a large extent obviates the need for conscious efforts to master linguistic features because such features are freely available for use in any situation. They emphasize, however, that such fortunate circumstances only hold for people who learned a second language naturally as young children, in much the same way as they acquired their mother tongue, a requirement that simply cannot be met for the majority of older learners with scant access to the target language. As they convincingly argue, "[f]or classroom learners, however, or for adults, implicit learning is very limited; in the former case because of grossly insufficient time/input, for the latter because of restrictions on their implicit learning capacities (and of course, because of both factors for adult classroom learners)" (2005, p. 444). If implicit knowledge were indeed so hard to come by, such learners would not be able to attain genuine communicative goals in real time, which is surely not true of many of them.

A possible explanation could be that some learners, particularly those endowed with high working memory capacity, are able to automatize explicit knowledge to such an extent that it can be used in real-time processing, thus becoming functionally equivalent to implicit (cf. DeKeyser 2003). Given their different learning histories and opportunities for the use of the target language, however, learners may develop both types of knowledge to some extent, and fall back upon either when performing a communicative task (cf. Ellis 2009a; DeKeyser 2010), which poses a considerable challenge for measurement that has recently been tackled by researchers (e.g. Ellis 2005b; 2006a, 2009b; Erlam 2006). All of this demonstrates that although the effectiveness of form-focused instruction, including corrective

feedback, is often considered in terms of its influence upon explicit and especially implicit knowledge, and such a stance is also adopted in this work, it is never entirely clear whether superior performance in a communication task can be attributed to the development of the latter or the automatization of the former. This might in fact be a spurious problem because what counts in the end, both from an empirical and educational perspective, is the learner's ability to use a specific feature in meaning and message conveyance, and the nature of linguistic knowledge that allows this use may be of secondary importance (cf. DeKeyser 2010; Pawlak 2012a, 2013a).[5]

If we accept the obvious fact that formal instruction facilitates in the vast majority of cases mostly the development of explicit second language knowledge, an issue of paramount importance for theorists, researchers and teachers concerns the relationship between these two types of representation. To be more precise, the question needs to be answered as to whether the two systems are distinct or whether there exist some intermediary stages of explicitness in knowing a specific linguistic feature, and whether explicit knowledge can turn into implicit knowledge and the other way round.[6] As regards the first of these problems, specialists such as Krashen (1981), Paradis (2004) and Ellis (2009a) adopt the stance that the two systems are dichotomous rather than continuous, whereas others, such as Karmiloff-Smith (1992), Dienes and Perner (1999) or Ullman (2001), lean towards the view that explicitness and implicitness are a matter of degree. The other issue has typically been discussed in terms of the possibility of interface between the two knowledge stores and three disparate views have been proposed, which are as follows:

(1) *The non-interface position*, according to which transfer between explicit and implicit knowledge, or in the opposite direction, cannot take place on account of the fact that there are fundamental differences in the ways they are acquired

[5] Relevant to this point is an interesting recent study in which Andringa et al. (2011) compared the effects of explicit and implicit instruction on the acquisition of the degrees of comparison and verb-final in subordinate in Dutch as a second language. The subjects' performance on a free response writing task showed that the resulting explicit knowledge proved to be as effective as implicit knowledge in bringing about statistically significant gains in accuracy over time, although the measure used favored the latter. It was also found, however, that the effects of explicit instruction and the utility of explicit knowledge interacted with first language influence, with similarity and lack thereof having a facilitative and inhibitory effect on acquisition, respectively.

[6] The author is aware that the two issues (separateness and interface) are closely related to each other, but, in his view, they are not identical since, for example, the fact that explicit and implicit knowledge are stored separately does not exclude the possibility that a parallel representation can be developed or that explicit knowledge is automatized to such an extent that it can be drawn upon in much the same way as implicit knowledge. In addition, N. Ellis (2005, p. 340) argues that the fact that the two systems are dissociated does not mean that they are not cooperative, because "(…) these implicit and explicit systems are like the yin and the yang. Conscious and unconscious processes are dynamically involved together in every cognitive task and in every learning episode".

(Krashen 1981; Hulstijn 2002), stored (Paradis 1994, 2004) and accessed (Ellis 1993).

(2) The *strong interface position*, which states that not only can explicit knowledge be derived on the basis of implicit but it can also convert into the implicit representation by dint of practice, although there is no consensus as to whether this practice should be controlled or communicative in nature (Sharwood Smith 1981; DeKeyser 1998, 2003, 2007b).

(3) The *weak interface position*, which assumes that such conversion is subject to constraints and can only occur when certain conditions are met, e.g. the learner is psycholinguistically ready to acquire a particular structure because he or she has reached the requisite stage of interlanguage development (Pienemann 1989; Ellis 1993, 1997), explicit knowledge only indirectly contributes to the internalization of implicit knowledge by setting in motion the necessary mental operations, such as the processes of noticing and internal comparison (Ellis 1993, 1997; N. Ellis 2008), or it enables language production which serves as auto-input to implicit learning mechanisms, thus fostering the growth of implicit representation (Schmidt and Frota 1986).

Obviously, from a pedagogical perspective, only positions (2) and (3) are viable as adopting the non-interface view would be tantamount to calling into question the instructional practices that have been used in language education for decades and have been very successful in many cases. It should also be pointed out that, as is the case with the distinction between explicit and implicit knowledge as such, the problem of interface may be somewhat overstated. This is because, although not all neurolinguists would see eye to eye with N. Lee (2004) that there is a connection between declarative and procedural memory, some of them, such as Paradis (2004, 2009), argue that explicit knowledge can foster the development of parallel implicit representation. In addition, following the cogent argumentation presented by DeKeyser (e.g. DeKeyser 2003, 2007b, 2010; DeKeyser and Juffs 2005), there may be no need whatsoever to grapple with the issue of interface because the main goal of instruction is not effecting a conversion of explicit knowledge into implicit knowledge or even stimulating a separate store of the latter, but rather, facilitating the automatization of the former to such an extent that it can be employed effortlessly and rapidly in real-time performance.

The discussion of the concepts of explicit and implicit learning and explicit and implicit knowledge inescapably ties in with the issue of instruction, or "(…) an attempt to intervene in interlanguage development" (Ellis 2009a, p. 16), which is intended to facilitate the necessary learning processes and trigger the development of linguistic knowledge, especially such that will underlie communicative ability in the target language. Broadly speaking, instruction falls into two main categories that have been differently labeled in the literature as *experiential* and *analytic teaching* (Stern 1992), *focus on meaning* as opposed to *focus on form*s and *focus on form* (Long 1991), and *indirect* and *direct intervention* (Ellis 2005a). Taking the last one as a point of reference, in the case of *indirect intervention*, "the purpose of instruction is to create conditions where learners can learn experientially

through learning how to communicate in the L2", while in *direct intervention* "the instruction specifies what it is that learners will learn and when they will learn it" (Ellis 2005a, p. 713). A related yet separate distinction is that made between *explicit instruction* and *implicit instruction*, which differ with respect to the degree of awareness of the focus of pedagogical intervention that learners are expected to possess, with the former inevitably involving references to rules underlying certain regularities in the input and the latter deliberately eschewing such a direct focus on the target language system. In the words of Doughty and Williams (1998b, p. 204), while explicit instruction is intended "(…) to *direct* learner attention and to *exploit pedagogical grammar* (…)", implicit instruction aims to "(…) *attract* learner attention and to avoid metalinguistic discussion, always *minimizing any interruption* to the communication of meaning" (emphasis original). Other distinctive features of these two approaches are discussed by Housen and Pierrard (2006), who point out that in explicit instruction the target feature is preselected in advance, it is likely to interfere with meaning and message conveyance, it tends to present structures in isolation, rely on metalinguistic terminology and entail controlled practice. By contrast, implicit teaching is incorporated into communicative activities, it is delivered in a way that minimizes interruption of message conveyance, it shuns reliance on metalanguage, contextualizes the targeted feature and encourages its application in real communication. Conceptualized in this way, explicit and implicit instruction can be seen as hallmarks of direct and indirect intervention, respectively. It should be emphasized, though, that both of them can in fact draw upon both explicit and implicit instructional options, which will be demonstrated when the role of corrective feedback in various frameworks of form-focused instruction is presented in the following subsection (cf. Ellis 2005a, 2009a).

Although the characterization of explicit and implicit instruction provided above does capture the key difference between these two ways of implementing pedagogic intervention, there are several caveats that need to be mentioned at this point. For one thing, it is clear that differentiating between the two instructional approaches by listing their distinctive features, as it is done by Housen and Pierrard (2006), runs the risk of oversimplification as it does not give justice to the whole range of finer distinctions that can be made within each category. Ellis (2009a) points out, for example, that both explicit and implicit instruction can be planned or spontaneous, because in both cases the teacher may preselect the targeted feature or react to it when errors arise. What is more, taking corrective feedback as an example, its provision itself may be more explicit or more implicit in both of these broad types of intervention, since, on the one hand, a learner's utterance can be reformulated with little intrusion into the communication of meaning as he or she is using a new structure to describe a picture, and, on the other, a brief metalinguistic comment can be offered as a student is participating in a discussion which is by nature focused on message conveyance. This, in turn, is closely related to the fact that the distinction between explicit and implicit instruction should be viewed in terms of a continuum rather than a dichotomy (Doughty and Williams 1998b), with some techniques and procedures falling somewhere in between the

two extremes, not only because of their inherent properties, but sometimes also because of the broader context in which they are used (e.g. presence of prior intervention in a specific area). To refer to error correction once again, it will be shown in Chap. 3 that there is a whole gamut of options that can be placed between an entirely explicit indication of an inaccurate form, as in 'You made a mistake. It is the past tense. Try again!', and an implicit recast which reformulates a deviant utterance but allows the learner to continue, with the interpretation of such a reformulation as negative evidence hinging upon whether a particular feature has recently been introduced and practiced in class. Finally, there may be a mismatch between the perceptions of the nature of instruction from the perspective of the teacher and the learner, because the intervention that the former externally envisages as explicit or implicit may not be interpreted or utilized in such a way by the latter (cf. Batstone 2002; Ellis 2009a).[7] When it comes to corrective feedback, the teacher's recast intended as implicit feedback that does not hinder the communicative intent might be followed by a direct question from a learner wishing to find out what exactly has gone wrong, which would testify to the fact that the two sides are following rather disparate agendas.

1.6 Corrective Feedback in Frameworks of Form-Focused Instruction

Before undertaking an attempt to demonstrate how the provision of corrective feedback has been incorporated into different classifications of instructional options in teaching language forms, it is first necessary to clarify how *form-focused instruction* is understood in the present work. This step is of paramount importance in view of the fact that sometimes quite disparate definitions can be encountered in the literature and lack of precision in this respect is bound to generate considerable confusion (cf. Long 1991; Spada 1997, 2011; Ellis 2001; Williams 2005; Pawlak 2006a; Loewen 2011). A crucial distinction which is worth mentioning at the very outset is that introduced by Long (1991), mainly because it has led to the revival of interest in teaching formal aspects of language in the 1990s, if not among practitioners, most of whom have never entirely abandoned it, then for sure among second language acquisition experts. He differentiates between: (1) a *focus on meaning*, which describes purely communicative approaches or, to use the labels employed in the preceding section, *experiential*

[7] Sharwood Smith (1991, 1993) points to a similar problem in the case of input enhancement, which is intended to enhance the salience of the targeted feature by manipulating the written (e.g. highlighting it through bolding) or oral (e.g. using stress or intonation when uttering it) input. This is because such external modification does not guarantee internal changes in learners' interlanguage as the forms may be noticed perceptually, but not linguistically. As he writes, "[a]lthough learners may notice the signals, the input may nevertheless be nonsalient to their learning mechanisms" (1991, p. 121).

teaching or *indirect instruction* (e.g. the Natural Approach, early variants of immersion education), where there is no attempt to draw learners' attention to linguistic features, (2) a focus on forms, which refers to what Doughty (1998) labels *traditional instruction*, based on principled selection and gradual presentation of the target forms to be taught, and (3) a *focus on form*, where efforts are made to direct learners' attention to form-meaning mappings as they are trying to get their messages across (e.g. in a communication task).

Given the importance attached to the last of these, the necessity of operationalizing it for empirical investigations, and the need to provide concrete guidelines for practitioners, subsequent efforts were primarily aimed at delimiting the boundaries of this concept which, with time, became somewhat synonymous with the term *form-focused instruction*. Long and Robinson (1998, p. 23), for instance, lay emphasis on the incidental nature of the intervention by clarifying that "(…) during an otherwise meaning-focused lesson, focus on form often consists of an occasional shift of attention to linguistic code features—by the teacher and/or one or more students—triggered by perceived problems with comprehension or production". Spada (1997, p. 73) extends this formulation by defining form-focused instruction as "(…) any pedagogical effort which is used to draw the learners' attention to form either implicitly or explicitly (…) within meaning-based approaches to L2 instruction [and] in which a focus on language is provided in either spontaneous or predetermined ways". Ellis (2001), in turn, conceives of form-focused instruction as encompassing both focus on forms and focus on form, subdividing the latter into *planned*, in which intensive attention to preselected forms is incorporated into communicative activities (e.g. correction of errors in the use of a specific grammatical structure), and *incidental*, which does not entail preselection and thus learners' attention is directed at a number of features (e.g. corrective feedback is employed to deal with different types of errors). Providing an overview of various definitions, Williams (2005, p. 672) concludes that all of them include a *focus on language as an object*, but differ with reference to the key characteristics embodied in Long's (1991) and Long and Robinson's (1998) initial conceptualization, i.e. an overall emphasis on meaning and message conveyance, only a brief diversion from the communicative activity in order to focus on a language feature, as well as a problem-oriented nature of that shift from meaning to form. Finally, in a recent state-of-the-art paper, Loewen (2011, p. 579) only retains the first of these requirements as the most basic and defines focus on form as "(…) brief attention, either planned or incidental, to problematic language items within a larger communicative context". Thus, he eliminates the condition for the occasional, problem-oriented and need-driven character of the intervention, and chooses to lean towards the more inclusive and perhaps also more pedagogically oriented interpretations proposed by Spada (1997, 2011) and Ellis (2001, 2008).

While all the definitions mentioned above are in line with the most recent theoretical positions, reflective of the predominant trends in research projects investigating the effects of pedagogic intervention and, as will be shown below, attach much importance to the provision of corrective feedback, they are insufficient as a basis for considering the overall role of error correction in foreign language pedagogy for

at least two reasons. First, they account for only those corrective reactions which occur in the course of communicative activities but at the same time all but ignore the treatment of errors which transpires in accuracy-oriented parts of the lesson, thus failing to take into account its potential contributions to the development of the target language. Second, even if it is assumed, as the present work does (see Sect. 3.2), that such contributions are limited in scope and of less significance than those accruing from corrective feedback in meaningful communication, it is an undeniable fact that in the vast majority of foreign language classrooms errors are corrected much more often in controlled exercises than in communicative activities, perhaps because the incidence of the former is much higher than that of the latter, and therefore practitioners undoubtedly require judicious and feasible guidelines in this area as well. In consequence, in the present section, the discussion of corrective feedback as a technique in teaching linguistic features is informed by the broadest possible interpretation of the concept of form-focused instruction proposed by Ellis (2001, p. 1), according to which the term is "(…) used to refer to any planned or incidental instructional activity that is intended to induce language learners to pay attention to linguistic forms. (…) Thus, FFI includes both traditional approaches to teaching forms based on structural syllabi and more communicative approaches, where attention to form arises out of activities that are primarily meaning focused". Such an inclusive approach is also evident in other contemporary publications, a good case in point being the description of FFI given by Nassaji and Fotos (2011). They provide the following explanation of their stance (2011, p. 13):

> Since our motivation is driven by pedagogical considerations, we conceive of FonF as a series of methodological options that, while adhering to the principles of communicative language teaching, attempt to maintain a focus on linguistic forms in various ways. Such a focus can be attained explicitly or implicitly, deductively or inductively, with or without prior planning, and integratively or sequentially. (…) In short, we believe that FonF must be a component of a broader L2 instructed learning that provides ample opportunities for meaningful and form-focused instruction including a range of opportunities for L2 input, output, interaction, and practice. It should be approached in ways that are responsive to the needs of the learners, takes (sic!) into account the various context-related variables, and consider (sic!) learner characteristics including their age, developmental readiness, and other individual differences.

Understood in this way, form-focused instruction should not exclude pedagogic solutions that can prove to be useful under particular circumstances in teaching particular target language items to a particular group of learners as well as individuals belonging to this group. Clearly, the same line of reasoning should apply to the provision of corrective feedback as a specific type of pedagogic intervention.

Figure 1.1 includes the possible choices representative of the overall approach that are available to teachers in *instructed second language acquisition*, understood here, following Housen and Pierrard (2006, p. 3), as "any systematic attempt to enable or facilitate language learning by manipulating the mechanisms of learning and/or the conditions under which these occur". Viewed in this way, *form-focused instruction*, as defined in the preceding paragraph, represents one of the two main conceptualizations of foreign language pedagogy and can be put on a par with *meaning-focused instruction*. These two broad approaches embody teaching practices which treat language as an object to be studied and as a tool

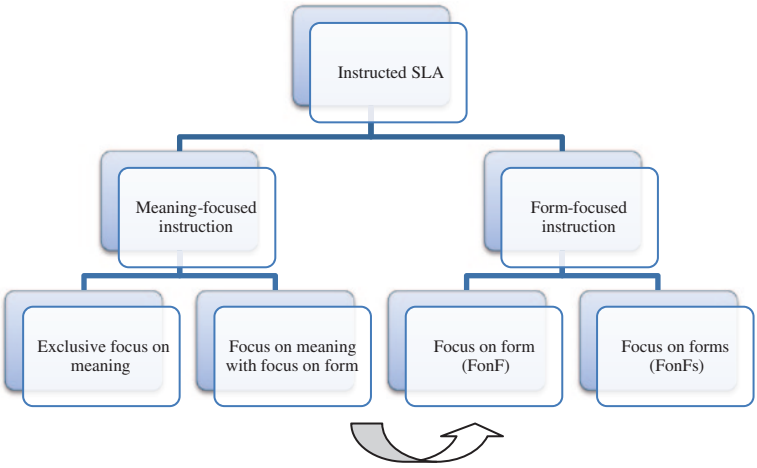

Fig. 1.1 Choices in instructed second language acquisition

for communication of meaning, respectively, and, as such, they correspond to *direct* and *indirect intervention* (Ellis 2005a) or *analytic* and *experiential teaching* (Stern 1992) mentioned in the previous section. To relate them to classroom reality and frequently discussed pedagogic options, form-focused instruction could be equated, depending on its implementation, with traditional methodology allowing little or no meaningful interaction, or weak variants of the communicative approach (cf. Celce-Murcia et al. 1997; Thornbury 2001; Savignon 2005; Littlewood 2011), sometimes relying to a considerable extent upon the PPP (presentation—practice—production) procedure. By contrast, meaning-focused instruction is exemplified by deep-end communicative language teaching (e.g. Natural Approach), content-based instruction (Lyster 2007, 2011), and different types of task-based language teaching and learning (cf. Ellis 2003; Nunan 2004; Willis and Willis 2007; Robinson 2011).

In accordance with the definitions and taxonomies discussed at the beginning of the present section, form-focused instruction can be further subdivided into a *focus on form* and a *focus on forms*, whereas meaning-focused instruction comprises approaches which proscribe grammar teaching and error correction, and those that tolerate or even welcome a certain degree of pedagogic intervention.[8] As indicated

[8] It should be noted here that in his taxonomy of instructed SLA, Loewen (2011) does not introduce a division of meaning-focused instruction into such that entirely rejects pedagogic intervention and such that involves a focus on form, choosing instead to graphically indicate the possibility that instruction of this kind may include elements of focus on form. Although, given the complexity of this issue, there seems to be no perfect solution, the taxonomy provided in this section seems to be superior in that it is more reflective of the underlying philosophies of the two approaches to pedagogical intervention and it makes it possible to better understand the rationale behind the decision to plan an instructional focus in communicative activities or to direct learners' attention to the targeted forms only incidentally.

by the arrow included at the bottom of Fig. 1.1, there is a substantial overlap between focus on meaning and focus on form, with the effect that they could sometimes be regarded as homogenous and their operationalization may in fact be almost identical. It should be kept in mind, however, that the two approaches draw upon quite disparate philosophies of foreign language teaching and manifest a tendency to make use of somewhat different sets of instructional options. This is because the former aims to rectify the inherent shortcomings of a sole focus on meaning and is thus more compatible with incidental intervention, whereas the latter is intended to complement grammar-based instruction with opportunities for communicative communication, or, as Fotos (1998) puts it, shift the focus from forms to form, an objective that more naturally fits in with planning and preselection. These complex, but at the same time undoubtedly fundamental, distinctions provide a point of reference for the consideration of the provision of corrective feedback as an indispensable component of form-focused instruction in the subsequent two subsections. For the sake of greater clarity and also in light of the fact that the division into fluency-oriented activities (e.g. communication tasks) and accuracy-based activities (e.g. different types of controlled exercises) is seen in this book as vital to the contributions of error correction, this will be done separately for instruction that involves a *focus on form*, or, alternatively, focus on meaning with brief episodes of pedagogic intervention, and such that entails *focus on forms*.[9] It should also be noted that although different techniques of error correction will necessarily be mentioned in the deliberations to follow, no attempt will be made to appraise their value since a more detailed discussion of these options from a pedagogic and empirical perspective is reserved until Chaps. 3 and 4 of the present work.

1.6.1 Corrective Feedback and Focus on Form

Since, as should be evident from what was said above, the possible interpretations of focus of form vary, with each of them bringing with them slightly different classifications of possible instructional options, the discussion of the role of corrective feedback in this section will draw on taxonomies introduced by Doughty and Williams (1998b), Ellis et al. (2002), Williams (2005) and Loewen (2011). Before taking a closer look at such divisions, it is warranted to make it clear that Long's (1991) original formulation of the concept of focus on form provides a strong rationale for reliance on error

[9] As will become clear in Chap. 2, the author is fully cognizant of the fact that fluency-oriented activities can also be employed in focus on formsas the last stage of the PPP procedure, in which case corrective reactions characteristic of focus on form can be utilized. The division, however, seems to be warranted here since, similar as the provision of corrective feedback may be in some situations in both focus on form and focus on forms, the rationale for its application is fundamentally different.

correction since it is the most obvious and perhaps even the default way in which learners' attention can be temporarily diverted to formal aspects of the target language during meaningful communication. This is recognized by Long and Robinson (1998), who emphasize the role of what they refer to as explicit and implicit negative feedback in getting students to attend to linguistic code features when they experience problems with comprehension or production of intended messages. As they write:

> (…) a teacher circulating among small groups of (…) learners working on a problem-solving task may notice that several of them are repeatedly making the same word order error (…). Having found the error to be pervasive or systematic, and (from the SLA literature and/or prior teaching experience) knowing the problem to be remediable for learners at this stage of development, the teacher is usually justified in briefly interrupting the group work in order to draw attention to the problem, using pedagogical devices appropriate for students of the age, literacy level, and metalinguistic sophistication concerned (…). Another way that focus on form may be attempted is through the provision of implicit negative feedback.

In fact, the majority of adherents to the focus on form approach are convinced that it is the latter type of correction that holds the most promise, particularly if it happens through corrective recasts, which reformulate the learner's utterance to make it more targetlike but at the same time preserve its intended meaning, are relatively unobtrusive and do not endanger the communicative nature of the ongoing interaction. Drawing upon psycholinguistic models of speech production as well as the findings of research into memory and speech processing, Doughty (2001), for example, argues that pedagogic intervention should most beneficially be *immediately contingent*, or directed at previously occurring utterances. This is because such an instructional intrusion promotes simultaneous processing of form, meaning and function within the so-called *optimal cognitive window of opportunity*, during which the learner still holds in memory his or her own output and the contingent input of the interlocutor, and which has been hypothesized to be about 40 s in length (cf. Doughty and Williams 1998b). In effect, there is a greater likelihood that the targeted feature will be noticed and that successful cognitive comparisons will be made, which will allow the learner to detect the mismatches between his or her communicative intent and the available linguistic resources, as well as his or her erroneous utterance and the correct version supplied by a native speaker, teacher or more proficient peer. Based on such reasoning, Doughty (2001, p. 257) comments that "(…) one of the most promising kinds of intervention is an immediate contingent recast, which can easily fit into WM [working memory] along with the original utterance to which it is to be compared". Similar enthusiasm for the beneficial role of recasts in drawing learners' attention to the code as they are engaged in making meaning is displayed by Long (2007, p. 77), who takes the stance that: "[o]ut of the many ways in which negative feedback is delivered in and out of classrooms (…), *implicit* negative feedback in the form of corrective recasts seems particularly promising" (see Sect. 4.3.2.2 for further discussion).

These theoretical assumptions underlie to a large extent the taxonomies of instructional options that can be drawn upon to achieve a *dual focus on form and meaning* (Ellis 2001) in the foreign language classroom, whether this is done in an

effort to enable communicatively taught learners to achieve higher levels of accuracy and precision, or to enhance the quality of predominantly code-focused instruction by providing opportunities for a genuine exchange of meaning. In fact, irrespective of their character, focus and scope, all of them attach paramount importance to the provision of corrective feedback, although differences may exist as regards the degree of its planning, explicitness and the requirement for output production. Perhaps the most flexible and inclusive is the stance adopted by Doughty and Williams (1998b), who allow the possibility of reactive (i.e. in response to learner need) and *proactive* (i.e. planned in advance), *explicit* (i.e. with learner awareness) and *implicit* (i.e. without such awareness), and *integrated* (i.e. embedded within communicative activities) and *sequential* (i.e. preceding or following such activities) focus on form.[10] Thus, they discuss a whole gamut of techniques and procedures representing different constellations of these criteria and which are, in the order from the most implicit and unobtrusive to the most explicit and obtrusive: *input flood* (i.e. seeding spoken and written texts with numerous instances of the target feature), *task essentialness* (i.e. using tasks whose successful completion requires the use of a specific feature), *input enhancement* (i.e. enhancing the salience of the targeted form in written and spoken input, e.g. by means of color-coding or added stress), *negotiation* (e.g. the use of confirmation checks or clarification requests in response to erroneous utterances, as in 'He go?' or 'What do you mean?'), *recasts* (i.e. corrective reformulations), *output enhancement* (i.e. the use of clarification requests to target a specific structure), *interaction enhancement* (i.e. a three-phase procedure combining input enhancement, output enhancement and explicit grammatical explanation), *dictogloss tasks* (i.e. collaborative reconstruction of texts containing the target form read by the teacher), *consciousness-raising* (i.e. small-group tasks in which learners interactively solve problems concerning target language grammar), *input processing* (i.e. activities aimed at modifying the default processing strategies based on the mother tongue), and *garden path* (i.e. a technique in which learners are deliberately induced to make an overgeneralization error).[11] Nonetheless, on closer inspection, it becomes clear that the provision of corrective feedback is considered to be to a large extent a prototypical instructional option ensuring a simultaneous focus on form and meaning because many of the techniques listed above in fact rely on error correction (i.e.

[10] A more detailed discussion of the benefits, implementation and relative effectiveness of integrated and sequential focus on form can be found in Spada and Lightbown (2008) who, however, opt to use instead the terms *integrated* and *isolated*. Also of relevance is the study by Spada et al. (2010) which compared the value of these two instructional options in the instructed acquisition of English passive constructions by adult learners.

[11] Since most of those techniques and procedures are not the main focus of the present book, they are not discussed here at length, although some of them are mentioned again in subsection 1.6.2, devoted to focus on forms, as well as in the subsequent chapters. They are discussed in more detail in a number of publications devoted to form-focused instruction, such as Doughty and Williams (1998b), Ellis (1997, 1998, 2005a, 2010a), Nassaji and Fotos (2011) or Pawlak (2004a, 2006a, 2007a, 2008a, 2013).

negotiation, recasting, output enhancement, interaction enhancement), while some of the procedures include a stage in which corrective feedback is indispensable or may at the very least be employed to help learners verify their hypotheses (e.g. task essentialness, dictogloss, consciousness-raising, input processing).

Even more emphasis on error correction can be seen in the remaining classifications of choices in focus on form, that is those put forward by Ellis et al. (2002), Williams (2005) and Loewen (2011), which overlap in many important respects. Following Ellis (2001, see earlier in this section), Ellis et al. (2002) recognize the superordinate distinction between planned (i.e. the target feature is preselected) and *incidental* (i.e. a variety of forms can be the target of intervention) *focus on formfocus on form into those tha*, but point out that "(…) whether focus on form is planned or incidental is not so much a matter of the task that is used as the teacher's orientation to the task (…). Even when the focus on form is planned, incidental attention to a range of forms in addition to the targeted form can occur" (2002, p. 421). Therefore, they elect to attach special importance to the division of instructional options in focus on form into those that are *reactive* and those that are *preemptive*. *Reactive focus on form* is of particular relevance here as it involves the treatment of learner errors as they are engaged in performing communication tasks, and it can be further subdivided according to two criteria, i.e. the degree of explicitness and the reason for the intervention. Since the issue of explicit and implicit instruction was addressed in Sect. 1.5 of the present chapter, it will not be dealt with again at this juncture, but the second dimension does require a clarification. In this respect, Ellis et al. (2002) make a pivotal distinction between *conversational focus on form* and *didactic focus on form*, which is related to whether or not an error committed by the learner triggers a communication breakdown. When it does and the teacher cannot comprehend the utterance that has been produced, we are dealing with a conversational shift of attention to a linguistic feature, which is representative to all intents and purposes of *negotiation of meaning* (see Sect. 2.4.1.2) and involves the use of confirmation checks (i.e. repetition of the whole or part of the incorrect utterance with rising intonation) and clarification requests (i.e. questions such as 'Sorry?' or 'Could you say this again please?', overtly inviting a reformulation of what has been said). Due to the fact that pedagogic discourse is typically predetermined and controlled by the teacher, much more common, however, are situations in which the error does not impede communication but it is addressed for purely instructional purposes, perhaps because it is persistent, or it pertains to a structure that has recently been introduced and extensively practiced (cf. Ellis et al. 2001; Pawlak 2005a). In this case, reactive focus on form is indisputably didactic in nature as it is intended to enable the teacher to pursue his or her instructional goals and it triggers the so-called *focus on form episode* (FFE), the defining characteristic of which is the fact that error correction constitutes a temporary departure from an otherwise communicative exchange. This results in *negotiation of form* rather than negotiation of meaning (Majer 2008), which can be set off by means of more or less direct (explicit) corrective moves ranging from the use of metalanguage to the employment of clarification requests (Lyster and Ranta 1997) (see Sect. 3.5.4.1 for a discussion of these

feedback strategies). When it comes to preemptive focus on form, it "consists of attempts by the students or the teacher to make a particular form the topic of the conversation even though no error (or perceived error) in the use of that form has occurred" (Ellis et al. 2002, p. 427). This might happen when a query is raised about the meaning of a lexical item which appears in a reading text or an explanation of a grammatical structure is provided because it has to be used in the upcoming oral or written activity. As is the case with reactive focus on form, it can also be of a conversational or didactic nature, depending upon the orientation adopted by the teacher.

Many of the distinctions introduced by Ellis, Basturkmen and Loewen (2002), although often under new labels, can also be found in the taxonomies proposed by Williams (2005) and Loewen (2011), which are to a large extent akin to each other, the main differences residing in the use of terminology and varying degrees of specificity. Williams (2005) takes as a point of departure such distinctive features of focus on form as *problematicity* (i.e. a learner problem as an impetus for the intervention), *planning* (i.e. overall lesson planning, anticipation of or reaction to errors, specification of instructional target), *obtrusiveness* (i.e. the degree to which the shift of attention to the code hinders the flow of communication, an issue closely related to the level of explicitness and awareness), and locus of *responsibility* (i.e. whether the change of emphasis from expression of meaning to formal aspects of the target language is orchestrated by the teacher or the learner). As can be seen from Fig. 1.2, she differentiates on this basis between *planned focus on form* and *spontaneous focus on form*, a distinction that mirrors the one drawn by Ellis (2001), and Ellis et al. (2002). As an extension of the two taxonomies, however, planned focus on form is broken

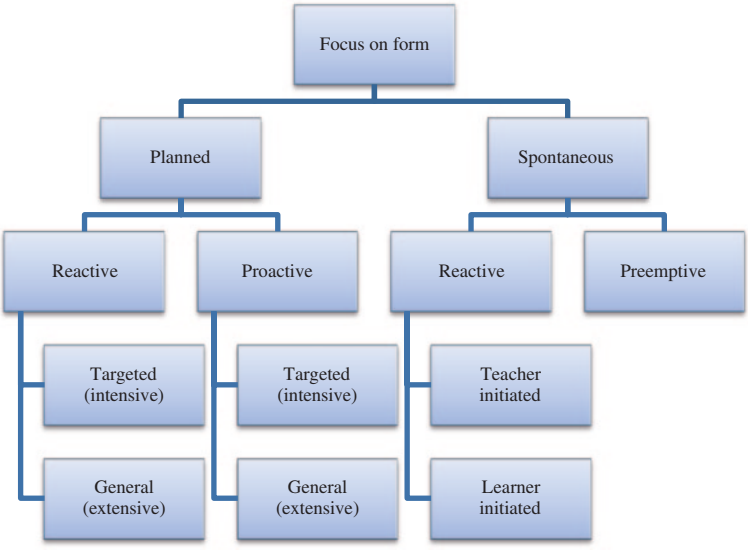

Fig. 1.2 A taxonomy of options in focus on form (adapted from Williams 2005, p. 677)

down into *reactive* (i.e. corrective feedback) or *proactive* (i.e. achieved through lesson planning), with each of them being either *targeted and intensive* (i.e. directed at a preselected form) or *general and extensive* (i.e. aimed at a range of features). To give an example, recasts constituting reactive focus on form can be utilized to address the wrong use of the past tense (targeted) or a multitude of errors involving grammar, vocabulary, pronunciation and pragmatics (general), whereas proactive focus on form can be implemented through the employment of input enhancement or communication tasks requiring the use of a specific linguistic feature (targeted) as well as increasing planning time for meaning-focused activities or the application of negotiation tasks (general). When it comes to spontaneous focus on form, it is subdivided into *reactive* and *preemptive*, which is identical to the division discussed in Ellis et al. (2002), but, in contrast to it, only the former can be initiated by teachers and learners, while the locus of responsibility for the latter lies entirely with the instructor. Loewen (2011) makes very similar distinctions, although he employs the terms *intensive* and *extensive* in place of *planned* and *spontaneous*, and in both cases prefers to talk about *reactive* and *proactive* types of pedagogic intervention. He also differs from Williams (2005) and at the same time agrees with Ellis et al. (2002) that, in the case of *extensive* (i.e. spontaneous, incidental) focus on form, the shift of attention to the code, whether reactive or proactive in nature, can be brought about by teachers or students. Lastly, he makes the point that extensive, proactive, teacher-initiated focus on form can be either *general*, when there is overall emphasis on accuracy (e.g. through instructions or guided planning), or *specific*, when the teacher directs learners' attention to linguistic items which he or she may perceive as problematic.

1.6.2 Corrective Feedback and Focus on Forms

If the provision of corrective feedback constitutes an inherent feature of focus on form, it can without doubt be regarded as a hallmark of the focus on forms approach, which can obviously be implemented in multiple ways, but, for reasons of convenience, clarity and simplicity, will be equated here with different interpretations of the so-called *shallow-end communicative language teaching* (Thornbury 2001). Instruction of this kind typically adheres to a greater or lesser extent to the well-known pedagogic principle postulating gradual progression from the introduction of a structure, having students use it in controlled exercises (e.g. fill-in-the-gap or transformation activities), and, only in the final stage, encouraging them to employ it in more communicative ways (e.g. picture description or role playing). This procedure is known as the PPP (presentation—practice—production) and it is ubiquitous despite all the criticisms that have been leveled against it by the proponents of task-based language learning (Skehan 1998). Clearly, error correction has an important role to play at each of the three stages, although it will perform different functions, it will be carried out by means of different techniques, and its contributions to second language development will vary as well.

When a particular linguistic feature is introduced, for example, the teacher may react in one way to another when students display their erroneous understanding of a deductive explanation or discover the wrong rule or pattern in the case of an inductive presentation. During controlled practice, in turn, corrective feedback is necessary as it helps students better understand the rules and test their hypotheses when they are working on a variety of oral and written accuracy-based activities, but, in order for it to have such an effect, it should perhaps be explicit and rely on explanations which may or may not be couched in metalanguage. Finally, as learners are trying to use the target feature to attain genuine communicative goals as part of fluency-oriented activities, the treatment of errors in their spoken and written output is also indispensible, at least in some situations, to promote noticing of form-meaning mappings, allow making cognitive comparisons, and lead to output modifications.

Even a cursory look at these functions shows that the rationale behind the provision of corrective feedback at this stage is akin to the reasoning underlying focus on form teaching and, in fact, although the overall philosophy may be different, the specific corrective moves will be similar in many respects to those discussed in the preceding section. Besides, as the present author has pointed out elsewhere (e.g. Pawlak 2006a, 2007a, b, 2008a, 2013), there is no reason why focus on forms and focus on form instruction should not be combined, with the production stage being extended over several lessons and being effectively transformed into a kind of planned focus on form, occasionally augmented with incidental focus on form. This would simply sanction the predominant classroom realities already in existence today, obviate the need to distinguish between communication tasks that stand on their own or are part of the PPP sequence, and embrace a holistic perspective on the contribution of corrective feedback, which is in fact done in Sect. 3.2, where the potential role of correction during fluency-oriented tasks and accuracy-based activities is tackled. Despite the fact that this may not always be the intention of the proponents of the taxonomies of instructional options in focus on forms considered in this section and all of them include a plethora of techniques and procedures enabling the implementation of the PPP in a traditional manner, they also provide a basis for such an integration, and whether or not it is achieved depends on the approach embraced by the teacher. In view of the fact that numerous classifications of this kind have been proposed over the years, the subsequent discussion will only be confined to those put forward in a number of publications by Ellis (1997, 1998, 2005a, 2010a), one of which was later modified by Pawlak (2004a, 2006a), as well as the most recent division introduced by Nassaji and Fotos (2011). It should be noted at the very outset that all of these frameworks are primarily concerned with grammar teaching and include an almost identical set of options, some of which were mentioned when discussing the taxonomy of focus on form techniques proposed by Doughty and Williams (1998b), but differences can be found in their particular configurations and the terminology used. Another important caveat is that although all of the classifications contain feedback options, these are discussed here only in general terms since a more detailed description and evaluation thereof will be undertaken later in this work.

As graphically illustrated in Fig. 1.3, Ellis (1997) and Pawlak (2004a, 2006a) make a superordinate distinction between *learner performance options*, understood as techniques that can be employed to elicit the use of the targeted language item from the learner, and *feedback options*, which include devices available for informing him or her about whether or not such use has been accurate. Learner performance options are further subdivided into *production-oriented* and *comprehension-based focused communication task*s, which necessitate the use of a particular structure for their successful completion (cf. the condition of task-essentialness in Sect. 1.6.1 earlier), and *feature-focused activities* which require learners to pay attention to the targeted forms in a much more straightforward manner. The latter, which in fact constitute the mainstay of foreign language pedagogy in the majority of educational settings, fall within the category of explicit instruction as they assume a certain degree of awareness on the part of learners as to the goal of a particular activity. They can be aimed to foster the development of either explicit knowledge by means of *consciousness-raising tasks* or implicit knowledge through the application of *different types of practice* (see Sect. 1.5 for a detailed discussion of the distinction between explicit and implicit knowledge and instruction). When it comes to consciousness-raising, a distinction has traditionally been made between *direct*, or *deductive*, teaching, drawing upon rule provision and explanation,

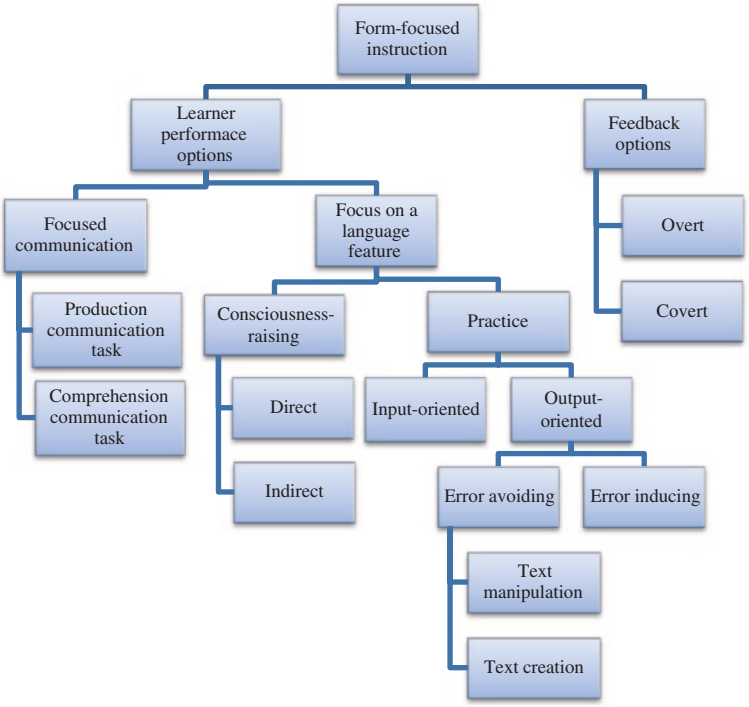

Fig. 1.3 Options in form focused instruction (based on Ellis 1997; Pawlak 2004a, 2006a)

and *indirect*, or *inductive*, teaching, encouraging learners to engage in the discovery of rules and patterns with the aid of pertinent language data. Practice, in turn, can be *input-oriented*, also known as *comprehension-based*, in which case students are invited to pay attention to form-meaning mappings without having to produce the targeted language feature, and *output-oriented*, also referred to as *production-based*, where the main aim is immediate use of the structures taught, first in controlled and later in free communicative activities. Input-oriented instruction can be implemented through the application of interpretation tasks (Ellis 1995, 2002b), processing instruction (van Patten 1996, 2002) or input enrichment techniques such as input flood or input enhancement (see, for example, Trahey and White 1993; White 1998) (see Mystkowska-Wiertelak and Pawlak 2012, for a fuller discussion of such options). Output-oriented instruction, which is undoubtedly the default choice for the vast majority of foreign language teachers, can be *error inducing*, such as the garden path technique (Herron and Tomasello 1992; see Sect. 1.6.1 and, by far much more often, *error avoiding*. The latter is implemented through techniques or procedures that can be placed on a continuum ranging from text-*manipulation activities*, in which learners are provided with sentences that they have to produce and manipulate only in limited ways (e.g. filling in gaps, transformation into a different pattern, substitution of one element with another, translation of the part containing the targeted form), to *text-creation tasks*, in which students are allowed to generate their own sentences with the use of the targeted structure (e.g. spot-the-difference-tasks, telling a story with the help of narrative tenses), and which are so similar to production focused communication tasks that the difference can sometimes become blurred (Pawlak 2006a). Feedback options, which are the most relevant to this work are divided into two groups, depending on whether they are overt and covert, the terms which correspond to the somewhat more common pairs of labels, namely *explicit* and *implicit* or *direct* and *indirect*, all of which indicate the contrast between intervention that is obtrusive and brings errors into the focal attention of the learner, and such that is relatively unobtrusive and enhances the likelihood that he or she will attend to the connection between form and function, respectively. On account of the fact that such distinctions will be handled in depth in Chap. 3, suffice it to say here that overt correction can take the form of metalinguistic feedback, repetition or focus on error (Spada and Lightbown 1993), whereas covert correction may be achieved through techniques characteristic of focus on form and discussed in Sect. 1.6.1, such as recasts or clarification requests.

Another interesting account of instructional options in focus on forms comes from Ellis (1998), who discusses them with reference to the computational model of second language acquisition, according to which the part of input that is converted into intake enables changes to the interlanguage system, or implicit target language knowledge, which, in turn, provides a basis for language production. In this view, form-focused instruction is believed to intervene in language development at four points: (1) input, (2) the development of the knowledge of the second language, (3) output production, and (4) feedback, although the specific techniques are to a large extent the same as those mentioned above and represented in Fig. 1.3. To be more precise, at point (1), learners are provided with structured

input as part of interpretation tasks, processing instruction or input enrichment, thus having access to positive evidence. At point (2), there is a choice between deduction and induction, the latter of which can involve the use of consciousness-raising tasks (Fotos and Ellis 1991; Ellis 2002b). At point (3), opportunities for production practice are created, with a move from highly controlled text-manipulation to much freer text-creation, and perhaps the use of focused communication tasks at some stage. Finally, at point (4), there is an attempt to inform learners that their use of the structure is incorrect, which constitutes negative evidence, but may in fact also supply positive evidence if the correction involves the provision of the accurate version in an unobtrusive and implicit way, as is the case with reformulations of erroneous utterances in the form of recasts (see the discussion of options in focus on form in Sect. 1.6.1).

The role of corrective feedback is also accorded a key role in slightly more general and less theory-based, but equally valid classifications of techniques and procedures in FFI that have been put forward by Ellis (2005a, 2010a), and Nassaji and Fotos (2011). Although Ellis (2005a, p. 716) admits that "[i]nstruction typically involves combinations of options", they can also be isolated into specific groups, as illustrated in Table 1.2. In this case, these options are divided into five

Table 1.2 Main options in instruction that involves focus on formfocus on formsfocus on forms (based on Ellis 2005a, p. 717)

Option	Description
1) Explicit instruction a) Didactic b) Discovery	Instruction that requires students to pay deliberate attention to the targeted form with a view to understanding it: (a) students are provided with an explanation of the form, and (b) students are provided with L2 data that illustrate the form and are asked to work out how the form works.
2) Implicit instruction a) Non-enhanced input b) Enhanced input	Instruction that requires learners to infer how a form works without awareness: (a) students are asked to memorize L2 data that illustrate the form or the L2 data are presented to the students without any special attempt to draw their attention to the targeted form, and (b) the target form is highlighted in some way (e.g. using italics, bolding or different colors) to induce noticing.
3) Structured input	Instruction requires learners to process L2 data that have been specially designed to induce the noticing of the targeted form and that can only be comprehended if the targeted form has been processed.
4) Production practice a) Controlled b) Functional	Instruction requires learners to produce sentences containing the targeted form: (a) students are given guidance in producing sentences containing the targeted form (e.g. by filling in blanks in sentences, transforming or translating parts of sentences), and (b) students are required to produce their own sentences containing the targeted form in a situational context.
5) Negative feedback a) Explicit b) Implicit	Instruction consists of corrective feedback responding to students' efforts to produce the targeted structure: (a) the feedback makes it clear to the student that an error has been made, and (b) the feedback models the correct form without explicitly indicating that the student has committed an error.

categories which, yet again, contain techniques already discussed above, albeit different labels are often employed. Accordingly, he distinguishes between: (1) *explicit instruction*, which can be *didactic* or *discovery*, equivalents of direct and indirect teaching, or deduction and induction, (2) *implicit instruction*, which consists in providing learners with *non-enhanced* (e.g. input flood) or *enhanced input* (e.g. input enhancement), (3) *structured input* (e.g. as included in input processing instruction), (4) *production practice*, which can be *controlled* or *functional*, equivalents of text-manipulation activities and text-creation tasks, and (5) negative feedback, which can be *explicit* or *implicit*, terms that are synonymous with overt and covert, or direct and indirect. What should be noted is that, in contrast to the earlier classifications (Ellis 1997, 1998), this one makes a distinction between two types of input-oriented instruction, depending on the level of awareness on the part of learners, namely such that is more or less implicit, as exemplified by memorization of second language patterns, input flood and input enhancement, and such in which students are cognizant of the instructional targets, as embodied in processing instruction and interpretation tasks, both of which rely on structured input.

In his most recent work, Ellis (2010a) offers a much simpler categorization, based on a juxtaposition of a proactive—reactive dimension, on the one hand, and a deductive—inductive dimension on the other, which appears to accord an even greater importance to correction than the classifications mentioned thus far. *Proactive instruction* can be *deductive*, when it involves oral or written metalinguistic explanations accompanying the provision of rules, or *inductive*, when it draws upon consciousness-raising tasks, or encourages learners to practice the targeted form in comprehension or production. By contrast, *reactive instruction*, which encompasses different forms of error correction, can also be *deductive*, in cases when the corrective reaction is explicit or metalinguistic feedback is provided, or *inductive*, when the incorrect utterance is *repeated* with the location of the incorrect form being signaled by emphatic stress, or it is reformulated by means of a corrective recast, with the accurate form being highlighted through intonation (cf. Doughty and Varela 1998).[12] As Ellis (2010a, p. 443) comments with regard to the latter, "[s]uch feedback can be considered inductive because learners are required to carry out a cognitive comparison of their original and reformulated utterances".

Finally, Nassaji and Fotos (2011) do not offer a comprehensive taxonomy of options in focus on forms, but the structure of their book on teaching grammar makes it clear that they organize their discussion around input-based and interaction- and output-based techniques. The former include processing instruction, textual enhancement and focus on discourse (i.e. sentence-level grammar), while

[12] It should be noted that this interpretation of a recast is more narrow than that present in most of the classifications mentioned here and in Sect. 1.6.1, because it is limited only to cases in which learners are unambiguously aware of the corrective character of the intervention thanks to the use of intonation. It is also interesting that Ellis (2010a) views corrective recasts as explicit, even though most researchers, such as Long (2007), regard them as implicit negative feedback.

the latter comprise structured grammar-focused tasks, which involve explicit consciousness-raising and implicit focused communication tasks, collaborative output tasks and interactional feedback. Even though this approach gives clear precedence to the provision of corrective feedback during meaning-focused, fluency-based tasks to the virtual exclusion of such that is provided in the course of code-oriented, highly controlled, accuracy-based exercises, it still demonstrates that error correction plays a pivotal role in familiarizing learners with formal aspects of the target language.

1.7 Conclusion

Given the ubiquity of error correction in the classroom and the importance attached to it by theoreticians, researchers, methodologists, teachers and learners, there is a clear need to stop considering it as an isolated phenomenon that just happens to be an inherent component of language teaching and to place it within a broader framework with a view to accounting for its contribution to the acquisition of the linguistic features which are the focus of pedagogical intervention. This has been the rationale behind the present chapter in which an attempt has been made to depict the provision of corrective feedback as one of the main options in form-focused instruction, understood here in a very inclusive way as all the steps taken in order to direct learners' attention to language forms, either as part of teaching based on the structural syllabus and the PPP procedure, or what Long (1991) labels focus on form, which occurs in response to learner need during communicative activities and aims to achieve a dual focus on form and meaning. An approach of this kind appears to be warranted on both theoretical, empirical, and practical grounds because justifications for the role of error correction come from the same theories and hypotheses as those that are invoked in support of form-focused instruction, and the bulk of research into FFI has been conducted with an eye to appraising the contributions of different types of corrective moves. Moreover, viewing corrective feedback as an option in formal instruction allows forging crucial links between the ways in which teachers react to erroneous forms in learners' output and the pedagogic goals they wish to attain in a particular lesson, a series of such lessons, as well as the whole language course.

In accordance with these assumptions, an attempt has been made in the preceding pages to define the concepts of error and error correction as they will be used throughout the present work, represent the treatment of oral and written errors as an indispensible component of language instruction, and provide an overview of the evolution of perspectives on corrective feedback as a reflection of changes in the perceptions of form-focused instruction. In addition, the critical distinctions between explicit and implicit learning, knowledge and instruction have been illuminated, and the role of error correction in the dominant frameworks of FFI has been illustrated, with a division into those representing focus on form and those illustrative of focus on forms. It seems warranted to emphasize some important

points that have emerged from the discussion of these themes. In the first place, it should be stressed one more time that an error is understood here as a form that would not be used by native speakers under comparable circumstances as well as any other behavior that the teacher signals as needing improvement, it pertains to the use of any language subsystem in speech and writing, although grammatical inaccuracies have typically been the focus of empirical investigations, and it is in most cases employed as a cover term for the various distinctions that have been proposed in the literature (e.g. error vs. mistake, etc.). When it comes to error correction, it is also defined in a broad manner as a reaction to inaccurate oral or written output, and it is intended as a synonym of corrective feedback as well as other labels that can describe the response to learners' incorrect language use. What should be added is that, irrespective of the vicissitudes evident in the role of error correction stemming from evolving theoretical positions, growing empirical evidence and passing fads in language teaching methodology, the provision of corrective feedback is to a large extent the hallmark of foreign language lessons, both during controlled exercises and communicative tasks, oral exchanges and written work. The effectiveness of error correction, however, hinges upon the ways in which it is conducted and these leave much to be desired, with the effect that clear-cut pedagogic guidelines are indispensable which, on the one hand, would be grounded in theory and research, but, on the other, would be context-sensitive and practicable. Finally, it has been amply demonstrated that feedback options are included in all classifications of form-focused instruction, they can be drawn upon during fluency-oriented tasks and accuracy-based activities, and they can vary along a range of dimensions, such as planning, the degree of explicitness and the requirement for output production. As such, they are an inherent part of instruction typical of both focus on form and focus on forms, with the caveat that many of the corrective moves can be utilized in both approaches to such a degree that they should be viewed as complementary rather than mutually exclusive. The following chapter further elaborates on some of these issues by presenting different perspectives on the utility of error correction and making a strong case for its contribution to the development of second language knowledge.

Chapter 2
Perspectives on Error Correction

2.1 Introduction

As should be clear from the discussion in the previous chapter, the opinions on the utility of the treatment of learner errors in speech and writing have been in a state of constant flux for many decades and they have been a close reflection of the major shifts of perspective on the value of form-focused instruction as such. Since the contribution of pedagogic intervention of this kind, despite being on the whole regarded as effective, facilitative or even necessary for language development and thus desirable in the majority of instructional settings (cf. Larsen-Freeman 2003, 2010a; Ellis 2006b, 2008, 2010a; Pawlak 2006a, 2013; Nassaji and Fotos 2007, 2011; Spada 2011), still has its detractors, it is not in the least surprising that the provision of corrective feedback also remains an exceedingly controversial issue which arouses heated debates among theorists and researchers. Perhaps the best illustration of this lack of consensus are pronouncements emanating from leading figures in the field of second language acquisition which clearly stand in stark contrast to each other. As Krashen (1982, p. 119) famously comments, for example, "even under the best of conditions, with the most learning-oriented students, teacher corrections will not produce results that will live up to the expectations of many instructors". Similar sentiments are echoed by Truscott, an extremely outspoken critic of oral and written correction in the use of grammatical structures, when he declares: "[m]y thesis is that grammar correction has no place in writing courses and should be abandoned" (1996, p. 328). As he adds in another publication, "[o]ral correction poses overwhelming problems for teachers and for students; research evidence suggests that it is not effective; and no good reasons have been offered for continuing this practice. The natural conclusion is that oral grammar correction should be abandoned" (1999, p. 453). In contrast to such reservation, Chaudron (1988, p. 133) wrote in his review of classroom-oriented research that "from the learners' point of view (…) the use of feedback may constitute the most potent source of improvement

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in (…) target language development", a position that is supported by a growing number of specialists. As Larsen-Freeman (2003, p. 126) points out, "(…) feedback on learners' performance in an instructional environment presents an opportunity for learning to take place. An error potentially represents a teachable moment". Ellis (2009c, p. 6), in turn, is sanguine that "[t]here is increasing evidence that CF [corrective feedback] can assist learning (…), and current research has switched from addressing whether CF works to examining what kind works best (…)".

In view of such contrary and very strong opinions, there is an urgent need to reconsider the role of error correction in instructed second language acquisition by subjecting to close scrutiny the pertinent theoretical positions, the empirical evidence collected to date as well as the diverse pedagogic arguments that have been put forward either to cast doubt on or to lend support to the provision of negative feedback on inaccurate target language use in spoken and written output. This is precisely the rationale behind the present chapter which, on the one hand, is intended to present a brief overview of the opposing perspectives on the place of error treatment in the foreign language classroom, and, on the other, to make a compelling case for the contribution of this option in form-focused instruction to second language development in terms of the growth of both explicit and implicit knowledge. Accordingly, at the very outset, the requirements for successful language acquisition will be outlined, which will be followed by the discussion of the most important criticisms that have been frequently leveled at the use of corrective feedback in language teaching on theoretical, empirical and practical grounds. Since reservations of this kind, however strong and vocal they might be, have been to a large extent refuted by the proponents of form-focused instruction, subsequently, an attempt will be made to provide a justification for the utilization of error correction, also in this case drawing upon influential SLA theories and hypotheses, both psycholinguistic and sociolinguistic in nature, the copious research findings testifying to the utility of corrective reactions to learner errors, as well as purely pedagogical arguments, such as those related to the specificity of the foreign language context. Although the present author is fully cognizant of the fact that there are some crucial differences between oral and written error correction which admittedly go far beyond only the mode (i.e. oral production vs. written output) in which it occurs (see Sect. 3.3 in Chap. 3 for a comparison), a decision has been made to discuss the rationale for the two types of negative feedback jointly. The reason for this is not only the fact that exactly this approach is adopted in many recent overviews of the role of corrective feedback, such as those penned by Russell and Spada (2006), Sheen (2010b), Ellis (2009c, 2010b), or Sheen and Ellis (2011), but also the existence of striking similarities between these two modes as regards the overall rationale and pedagogical choices, not to mention the fact that even indisputable differences become blurred when written feedback is negotiated with learners (Nassaji 2007a) or in situations when corrective reactions to erroneous spoken or written output are delivered through the computer (Sagarra 2007).

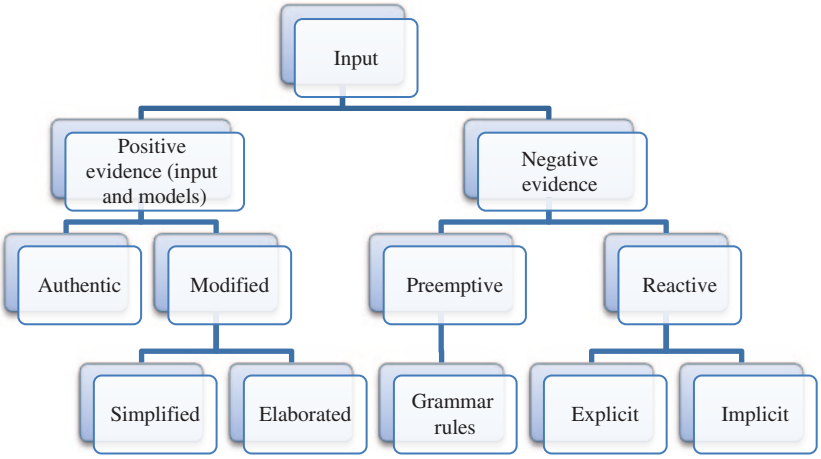

Fig. 2.1 Types of evidence for second language acquisition (adapted from Doughty 1998, p. 143, and Long and Robinson 1998, p. 19)

2.2 Requirements for Successful Second and Foreign Language Learning

Before taking stock of the contrasting positions on the role of error correction in the foreign language classroom, it is perhaps fitting to examine the conditions that have to be in place for the success of the acquisition of an additional language, irrespective of whether it takes place in a second or foreign language context. According to Gass (2003), these conditions include the availability of an adequate quantity of high quality exposure to target language samples and abundant opportunities to engage in the production of output, especially such that entails the use of linguistic resources in real-time communication.

As illustrated in Fig. 2.1, *exposure*, more commonly referred to in the literature as *target language input*, can take the form of *positive evidence*, understood as information about what is accurate and therefore possible and acceptable in a second language, or "language used, that is utterances in context" (Gregg 2001, p. 170), and *negative evidence*, defined as information that certain utterances are incorrect and thus impossible in that language, or "language mentioned" (Gregg 2001, p. 170).[1] Positive evidence

[1] The distinction between positive and negative evidence was first applied to first language acquisition, in which case the former refers to *primary linguistic data* (PLD), or the language that caretakers direct at children, whereas the latter indicates that a specific form or structure is not grammatical, and does not normally occur in child-directed speech (cf. Gregg 2001), although see note 4 in Chap. 1. Gass (2003) also mentions another type of evidence, known as *indirect negative evidence*, which provides information that certain features or rules are not possible since they fail to appear in relatively simple expressions in the expected environment. Although by Chomsky's (1981) own admission, this type of evidence may be relevant to the acquisition of the mother tongue, it has been subject to little empirical investigation, "perhaps because no theoretical arguments rest crucially on it" (Gass 2003, p. 249).

contains exemplars of accurate utterances in the ambient input as well as models of such utterances deliberately presented by the teacher in the classroom environment, and it can be *authentic* (e.g. a newspaper article intended for native speakers or a movie with an original soundtrack) and *modified* with the adjustments made in the latter involving either *simplification* (e.g. a coursebook text which contains a limited number of tokens and types of vocabulary items, and is written with the help of relatively simple grammatical structures) or *elaboration* (e.g. difficult words are defined and exemplified when the teacher is telling a story). When it comes to negative evidence, it can be *preemptive*, when pertinent rules are provided and grammatical explanations offered before the learner has a chance to make a mistake, or *reactive*, in which case it represents various options in error correction or negative feedback as it was described in the preceding chapter. Although the graphical representation suggests that such evidence can only be explicit (i.e. over or direct, as in the provision of the correct version) or implicit (i.e. covert or indirect, as in a recast or a clarification request), as was demonstrated in Sect. 1.6 of Chap. 1 and as will be further elaborated upon in Chap. 3, it can also differ along other dimensions, the most important of which concerns whether a particular corrective move is input-providing or output-inducing.

Commenting on the significance of these two types of data, Gass (2003, p. 226) writes that "[p]ositive evidence is the most obvious necessary requirement for learning. One must have exposure to the set of grammatical sentences in order for learning to take place. However, the role of negative evidence is less clear". Indeed, even a total layperson would be very unlikely to even contemplate the possibility that successful second language acquisition could ever occur without adequate access to utterances in the target language, be they spoken or written. By the same token, although influential SLA theories may differ with respect to a number of issues, such as the role of form-focused instruction, the requirement for comprehension and production, or the characteristics of input that would make it the most conducive to language development, all of them consider the presence of a sufficient amount of language data to be indispensible for learning. The situation is entirely different when it comes to various types of negative evidence, both preemptive and reactive, since, as was demonstrated in Sect. 1.4 of Chap. 1, its utility is called into question by the proponents of theoretical positions based on nativist accounts of language acquisition, such as Krashen's (1981, 1982) Monitor Model, which have provided an impetus for the advent of non-interventionist approaches embracing the zero grammar option (i.e. deep-end variants of CLT) and will be discussed in detail in the following section.

Since the arguments testifying to the beneficial contributions of negative evidence, especially of the reactive type, will be thoroughly discussed in Sect. 2.4, suffice it to say at this juncture that the need for some kind of pedagogic intervention is now recognized in most leading theories and hypotheses seeking to explain the process of second language acquisition and there is mounting empirical evidence that formal instruction works and its effects are durable (Pawlak 2006a; Ellis 2008, 2010a; Larsen-Freeman 2010a; Nassaji and Fotos 2011; Spada 2011). It should also be noted that the provision of negative evidence is seen as

indispensable even by those adherents of approaches based on Universal Grammar who adopt the so-called *indirect* or *partial access view*, which posits that principles continue to be available after the end of the critical period but learners cease to have access to the full range of parametric variation (e.g. Schachter 1996).[2] As a consequence, formal instruction is needed to highlight grammatical contrasts for features that have different parameter settings in the mother tongue and in the second language, and are therefore not learnable from positive evidence alone, as is the case with adverb placement in English and French (White 1991). To further complicate matters, reactive negative evidence, both preemptive and reactive, may in fact provide learners not only with information about what is inaccurate and unacceptable in the target language but also well-formed utterances and models of use, thus also supplying valuable positive evidence. This happens when the teacher explains the use of a new grammar structure with the help of numerous examples of authentic or contrived sentences or longer texts. Similarly, a recast used in response to inaccurate output on the part of a learner provides information about what is not permissible in the target language, at least when it is interpreted as negative feedback, which may not always happen (cf. Lyster 1998a), but, at the same time, being an implicit reformulation of what has been said, it also constitutes an important source of exposure as a TL model.

Equally controversial is the requirement that successful language acquisition is only possible when learners are provided with opportunities to generate output. This is evident in Krashen's (1981, 1985, 2003) claim that the availability of comprehensible input (i.e. input whose structural complexity only slightly exceeds learners' current level of competence) is all that is needed for interlanguage development, as expressed in his well-known pronouncement that "[s]peaking is the result of acquisition, not its cause. Speech cannot be taught directly, but 'emerges' on its own as a result of building competence via comprehensible input" (1985, p. 2). The role of production is also played down to some extent in VanPatten's (1996, 2002, 2007) Input Processing Theory which sets store by the strategies that learners employ to derive input from intake, thus attaching much more significance to the comprehension of target language structures. These theoretical positions have resulted in the emergence of the Natural Approach and Processing Instruction, respectively, which do not entirely obviate the need for output, but view its contribution to the process of acquisition as limited and are based on the assumption that it should be stimulated at later stages of the teaching process. A very different stance can be found in the tenets of interaction-based theoretical positions, both those emphasizing the psycholinguistic processes of acquisition and those stressing its social dimension, such as the Interaction Hypothesis (Long 1983, 1996), the Output Hypothesis (Swain 1985, 1995, 2005) and Sociocultural Theory (Lantolf 2006; Lantolf and Thorne 2007; Lantolf and Beckett 2009). As will be demonstrated in Sect. 2.4.1, which provides a more detailed account of

[2] A fuller account of the issue of accessibility of Universal Grammar in second language learning can be found in publications by White (2007) or Ellis (2008).

such theories and hypotheses, while the first two view output as a factor enabling the move from semantic to syntactic processing, triggering noticing, allowing hypothesis testing, encouraging reflection on target language use, and contributing to greater automaticity and fluency (Swain 1995, 2005; Gass 1997), the third is predicated on the belief that social interaction is indispensable because it mediates second language development.

Leaving such theoretical considerations aside, it should be clarified that opportunities to engage in output production also play such an essential role in language acquisition because oral and written interactions are bound to generate more positive and negative evidence that learners can make use of in restructuring their developing interlanguage systems. This is because, for example, active participation in conversational exchanges with more proficient interlocutors inevitably results in increased exposure to well-formed utterances in the target language as students listen to their questions and responses. On the other hand, the very act of language production creates numerous contexts in which errors are likely to be committed, which can provide a stimulus for the occurrence of negative evidence, as the use of incorrect forms provokes the provision of corrective feedback by native speakers, teachers, or more proficient peers. As mentioned above, such correction may in itself constitute positive evidence as well, let alone the fact that it can be accompanied by additional models when brief grammatical explanations are given.

2.3 Reservations About the Utility of Oral and Written Corrective Feedback

Doubts concerning the value of error correction in instructed second language acquisition are similar to the criticisms voiced about form-focused instruction as such, and they are related to its theoretical underpinnings, research findings demonstrating the existence of developmental sequences that are impervious to instruction, methodological problems visible in the studies of the effectiveness of corrective feedback, and purely practical concerns. As to the first of these, as was mentioned in Chap. 1 and was also pointed out in the preceding section, the need for the provision of corrective feedback, which constitutes a form of negative evidence, is all but denied by nativist learning theory and the related UG-based theories, according to which all that is needed for successful language learning is access to adequate second language data, or positive evidence, which sets in motion internal processing mechanisms. In fact, scholars such as Schwartz (1993) or Towell and Hawkins (1994) are highly skeptical of even the very modest role of formal instruction in allowing parameter resetting postulated by White (1991). They claim instead that although the presence of negative evidence may indeed aid learners in using the structures they are taught in immediate production or eliminating an error right after they are corrected, these effects are temporary and are bound to wear off very quickly because such pedagogic intervention does not

affect the development of implicit knowledge of the L2. The truth is, however, that no matter which variant of a UG-based approach is adopted, the full transfer, full access or partial access one, the contribution of form-focused instruction, including the treatment of learners' errors has to be viewed as marginal, confined at best to drawing students' attention to the parameter settings that are absent from their first language. This situation is pertinently summarized by Doughty and Williams (1998b, p. 201) when they write: "If a UG-based explanation were to prevail, regardless of whether a role for explicit and negative evidence in SLA is rejected or accepted, then teachers would simply have to wait for the results of linguistic research to determine precisely what resides in UG and do their best to provide the appropriate triggering data in their classes". Doughty (2003, p. 257) adds to this that "[b]y the UG-based SLA account, then, instruction is either entirely or largely unnecessary", with instruction clearly also subsuming corrective reactions to learners' errors.

The main tenets of nativism found their reflection in two influential theories of second language acquisition which share many crucial characteristics, namely the Identity Hypothesis (e.g. Newmark 1966) and the Monitor Model (Krashen 1981, 1982). The first of these states on the basis of empirical evidence speaking to the existence of many similarities between the initial stages of first and second language acquisition (e.g. occurrence of overgeneralization errors, the use of formulaic expressions, silent period, relatively fixed orders and sequences of acquisition) that the two processes are essentially identical. Even though this view was later challenged by Bley-Vroman (1988) in his Fundamental Difference Hypothesis, it paved the way for the emergence of radical non-interventionist approaches such as the Cognitive Anti-Method (Newmark and Reibel 1968), which postulated that teachers should try to recreate in the classroom the conditions of native language acquisition, as this will allow effortless and automatic learning of second and foreign languages. Logically, such a stance was tantamount to total rejection of formal instruction in the form of rule explanation, controlled practice or error correction, a recommendation that was embraced by subsequent followers of the zero grammar option (cf. Krashen 1981; Prabhu 1987). As regards Krashen's (1981, 1982, 1985, 2003) Monitor Model, without doubt one of the most comprehensive and influential theories of SLA ever proposed, it built upon the assumptions of both nativist learning theory and the Identity Hypothesis, and was informed by the results of interlanguage studies conducted in the 1970s and 1980s (see below).

In its final version, the theory comprises five related hypotheses, all of which attribute only a minor role to formal instruction. According to the Acquisition-Learning Hypothesis, for example, explicit and implicit learning are two distinct processes and there is no transfer between explicit and implicit knowledge, a proposal that is referred to as the *non-interface position* (see Sect. 1.5 in Chap. 1 for the descriptions of these two types of representation and the possible relationships between them). The Monitor Hypothesis, in turn, claims that it is acquired (implicit) knowledge that initiates speech, underlies fluency and is responsible for intuitive judgments about correctness, whereas the role of learned (explicit) knowledge is limited to making minor modifications to the utterances generated in this

way. Severe limitations on the utility of instruction also derive from the Natural Order Hypothesis, according to which acquisition is constrained by the orders and sequences of acquisition, and the Comprehensible Input Hypothesis, which ascribes the main causative role in that process to exposure to *comprehensible input*, or language data that can be understood with effort, and not negative evidence or output production. Finally, the Affective Filter Hypothesis assumes that such individual variables as self-esteem, attitudes, motivation or anxiety may impinge on acquisition indirectly by influencing learners' readiness to seek opportunities for exposure as well as allowing or preventing input from reaching the language acquisition device, with the implication that instructional practices should be motivating and stress-free. Taken together, these hypotheses do not augur well for the effectiveness of error correction since not only is it expected to have no influence on the development of implicit knowledge, but can also lead to heightened anxiety levels and fear of output production. Although Krashen (2003) admits that error correction might assist learning, he leaves little doubt as to the scope of its effects, when he comments that such pedagogic intervention is only viable in the case of "(…) a small residue of grammar, punctuation, and spelling rules that even native speakers do not acquire, even after extensive aural and written comprehensible input" (2003, p. 3). Potential candidates for such treatment include, in his view, the 'lie/lay' or 'it's/its' distinction, or words which are notorious for difficult spelling such as 'commitment' or 'possess'. It is obvious, though, that these forms are not cause for too much concern for language teachers who typically provide corrective feedback on much simpler features which are used incorrectly in systematic ways.[3]

A case against error correction can also be made on the basis of research findings which provide unequivocal evidence that second language acquisition is subject to developmental constraints which cannot be easily overcome by formal instruction, also such that involves the treatment of errors committed by learners. For one thing, there are the so-called *morpheme order studies*, such as those conducted by Dulay and Burt (1974), Larsen-Freeman (1976) or Krashen (1977), which demonstrated that there exists a consistent order of acquisition of grammatical functors irrespective of the learners' age or nationality and provided a stimulus for Krashen's Monitor Model. Even when it is acknowledged that such studies suffer from serious methodological flaws and that full mastery of inflectional morphemes is often beyond the reach of even advanced learners (see Larsen-Freeman and Long 1991; Ellis 2008; Gass and Selinker 2008), it would clearly be imprudent not to take heed of such empirical findings. As Larsen-Freeman and Long (1991, p. 92) thoughtfully commented, "(…) the morpheme order studies provide

[3] Interestingly, misgivings about the usefulness of correction were also expressed in an earlier work by VanPatten (1992), who is on the whole a supporter of form-focused instruction, especially such that is comprehension-based (i.e. processing instruction, or PI). As he commented, "(…) correcting errors in learner output has a negligible effect on the developing system of most language learners" (1992, p. 24). However, he modified his stance in subsequent publications and recognized the role of negotiation in stimulating noticing, enabling learners to create connections between form and meaning, and therefore contributing to acquisition (cf. VanPatten 2003).

strong evidence that ILs exhibit common accuracy/acquisition orders. (…) there are (…) too many studies conducted with too much methodological rigor and showing sufficiently consistent general findings for the commonalities to be ignored".[4] Secondly, there is abundant longitudinal research which demonstrated the existence of regular *developmental stages* in the acquisition of a number of syntactic domains in a variety of languages, such as interrogatives, negatives, relative clauses or word order rules, patterns that are only minimally influenced by the first language background or learning environment (see Ellis 2008; Ortega 2009a, 2010; Spada and Lightbown 2010, for overviews of specific studies). Obviously, also here, it is possible to indicate a number of limitations such as the occurrence of substages in some languages (e.g. post-verbal negation used by German learners of English), excessive preoccupation with grammar, methodological problems as well as the fact that only a fraction of features in a handful of languages have been examined so far (cf. Ellis 2008; Ortega 2010). But again, the results are quite consistent and they definitely have to be reckoned with as they provide convincing evidence that "[i]nterlanguage development is systematic, not haphazard. For a substantial number of language areas, learners are seen to traverse several stages, each consisting of predictable solutions, on their way to developing the various full-fledged subsystems of the target language" (Ortega 2010, p. 83). Thirdly, once the existence of all these developmental patterns is recognized, there is a question as to whether they can be influenced by FFI. The available empirical evidence indicates that such regularities remain by and large unaffected by pedagogical intervention unless the learner has reached the necessary level of *psycholinguistic readiness*, understood within the framework of Pienemann's (1989, 2007) Processability Theory and Teachability Hypothesis as the ability to perform requisite syntactic operations (cf. Ellis 2008; Bardovi-Harlig and Comajona 2010; Ortega 2010). What is more, untimely instruction may foster the process of overgeneralization, as when learners overuse the present progressive '-ing' (Lightbown 1983), as well as avoidance, for example in situations when they deliberately fail to use adverb preposing (Pienemann 1989), thus having a detrimental effect on acquisition. In light of such empirical evidence, the utility of corrective feedback as one of the key options in form-focused instruction surely has to be regarded with much circumspection. After all, one might logically argue that there is little point in going to so much trouble correcting learners' oral and written errors if such treatment is very unlikely to result in immediate acquisition of the structures being the object of such treatment.

The contribution of error correction has also been called into question on the basis of the results of empirical investigations that have specifically addressed the effects of corrective feedback on errors committed by learners in speech and

[4] A thorough discussion of the potential factors which may account for the existence of fixed orders of acquisition of grammatical morphemes is undertaken by Goldschneider and DeKeyser (2001), while a state-of-the-art overview of current perspectives on the learning and processing of inflectional morphology by second language learners can be found in the first 2010 issue of *Language Learning* with excellent review papers by Gor (2010) and Larsen-Freeman (2010b).

writing, although, as will be shown in the following section, this interpretation is open to discussion in some cases and reflects the side of debate that its proponents situate themselves on. In the first place, as shown by Chaudron (1988) in his first major overview of classroom-oriented research, early studies failed to find evidence for the impact of error treatment on language development, good examples being the research projects conducted by Chaudron (1986) and Brock et al. (1986). In the former, it was determined that only 39 % of inaccurate forms corrected by the teacher in a French immersion class were eliminated in the subsequent utterance, while in the latter no beneficial effects of correction were observed in the short term, but the researchers did not rule out the possibility that they might appear in the future, a suggestion that is in line with the tenets of the Delayed-Effect Hypothesis (cf. Lightbown 1985, 1998). Reservations about the value of correction for foreign language pedagogy can also be raised in connection with the findings of *descriptive research* into the effectiveness of oral corrective feedback provided during naturally occurring classroom interaction, a line of inquiry that was largely inspired by Long's (1991) claim that teachers should draw learners' attention to target language features in the course of meaning and message communication. These studies, good examples of which are the research projects conducted by Lyster and Ranta (1997), Panova and Lyster (2002), Sheen (2004) or Pawlak (2005a), discussed in more detail in Sect. 4.3.2.1 in Chap. 4, address in particular the occurrence of incidental (extensive, spontaneous) reactive focus on form (see Sect. 1.6.1 in Chap. 1) and its influence on learners' subsequent language production. Although their findings indicate that at least some types of feedback generate successful output modifications (i.e. uptake and repair), thus testifying to immediate benefits of error correction, they do not provide adequate evidence for acquisition since such improvement may be temporary and erroneous forms may reappear at a later time (Leeman 2007; Long 2007), a pattern predicted by the adherents of UG-based approaches (e.g. Schwartz 1993; Towell and Hawkins 1994).

Similar criticisms have been leveled at research into written feedback, particularly such that investigates the effect of such feedback on learners' *revisions of the same paper* or, to be more precise, on their ability to eliminate the errors corrected in some way in a subsequent draft (e.g. Fathman and Whalley 1990; Ashwell 2000; Chandler 2003; Ferris and Roberts 2001; Ferris 2006). Some SLA researchers (e.g. Sheen 2007b, 2010b; Ellis et al. 2008) point to the flaw inherent in these studies which, similarly to descriptive research on oral error correction, pertains to the fact that they cannot demonstrate that the gains in accuracy will be carried over to writing assignments completed in the future. As Hyland and Hyland (2006, p. 85) comment, echoing the concerns raised by Truscott (1996), "(…) demonstrating that a student can utilize teacher feedback to successfully edit from one draft of a paper to the next tells us little about the learner's successful acquisition of the linguistic features addressed by the feedback". They elaborate on this critical limitation in the following way (2006, p. 86):

> (…) many studies of feedback on error have ignored how language acquisition occurs, although the influence of feedback on the learner's long term writing development fits closely with the SLA research (…). SLA studies indicate that second language acquisition

> takes place over time and that mistakes are an important part of the highly complex developmental process of acquiring the target language. In fact, there may be U-shaped course of development (Ellis 1997) where learners are initially able to use the correct forms, only to regress later, before finally using them according to the target language norms (…). We cannot, in other words, expect that a target form will be acquired either immediately or permanently after it has been highlighted through feedback. Even though explicit feedback can play an important role in second language acquisition, it needs time and repetition before it can help learners to notice correct forms, compare these with their own interlanguage and test their hypotheses about the target language.

The most severe criticism of research into feedback on learners' written production, however, comes from Truscott (1996, 1999, 2004, 2007), who mentions a number of studies which have proved the futility of grammar correction in written work, both such concerning the teaching of writing in the first language (e.g. Knoblauch and Brannon 1981) and, more importantly, such addressing this issue in second language instruction (e.g. Kepner 1991; Sheppard 1992). Some support for these reservations also comes from a study conducted by Lee (2004), which, similarly to other research projects of this kind (see Sect. 2.4.2.5), found that both teachers and students were in favor of corrective feedback, but only about half of the corrections provided were accurate. Of particular interest is the synthesis and meta-analysis of research into written error correction undertaken by Truscott (2007), who looked at both controlled (i.e. such that include a control group) and uncontrolled (i.e. such that do not contain a control group and measure the effects of pedagogic intervention in terms of absolute gains) studies, 12 in total, and concluded that: "(a) the best estimate is that correction has a small harmful effect on students' ability to write accurately, and (b) we can be 95 % confident that if it actually has any benefits, they are very small" (2007, p. 270). Also worth mentioning at this point is a recent study by Truscott and Hsu (2008), which found that the students who received feedback in the form of underlining did improve in comparison with the controls on a revision task, but the performance of the two groups was virtually identical on a guided narrative, based on a set of pictures.[5]

There are also more pedagogically oriented arguments that have been advanced against the provision of corrective feedback on inaccurate forms in learners' oral and written output. Some of them are the direct corollary of research into the process of first language acquisition and the characteristics of naturalistic discourse, taking place between native speakers as well as native speakers and second language learners outside the confines of the classroom. As to the former, although recent empirical evidence suggests that children's erroneous utterances can be implicitly reformulated by caretakers (cf. Snow 1986; Farrar 1992; Saxton 1997; see also note 4 in Chap. 1), child-directed speech has been shown to focus on

[5] An interesting critique of this particular study is offered by Bruton (2009), who argues that it suffers from inconsistency in terms of its design and argumentation. In particular, he points out that the errors made in the second narrative did not correspond to those corrected in the first narrative, and therefore it was impossible for the corrections and revisions to have an effect on subsequent writing.

factual content, social routines and communicative effectiveness, with the outcome that parents are not overly concerned with grammatical accuracy, they avoid explicit correction and therefore allow even the most blatant inaccuracies to go unnoticed (Brown 1977; Schmidt and Frota 1986; Mitchell and Miles 1998). The latter, in turn, demonstrated the soundness of Chaudron's (1988, p. 132) claim that "no one participant in natural communication is specified as having the automatic right to impose judgment on the other's behavior, especially linguistic behavior". To be more precise, it was found that there is marked preference in naturalistic discourse for self-initiated, self-completed repair, to the virtual absence of other-initiated, other completed corrections, with indications that something has gone wrong being modulated, tentative and realized by means of clarification requests and comprehension checks (cf. Schegloff et al. 1977; Gaskill 1980; Gaies 1987; van Lier 1988). It is not surprising that these findings should give methodologists and teachers serious food for thought with respect to the overall value of corrective feedback. This is because a valid point could be made that if children can succeed in mastering their first language without the benefit of corrective moves supplying them with negative evidence and the lack of error treatment does not have a negative impact on real-life communication and does not seem to adversely affect out-of-class learning, perhaps the best solution would be to emulate these interactional patterns in language classrooms, subscribing in this way to the main premises of non-interventionist approaches (see Sect. 1.4 in Chap. 1). Other potential problems connected with correction are highlighted by Krashen (1982, p. 74), who calls it "a serious mistake", arguing that it puts learners on the defensive, leads to their reluctance to use and experiment with difficult structures, and fosters the development of learned rather than acquired knowledge which underlies spontaneous language production.

The most extensive, forceful and cogent justification for the claim that error correction should be abandoned altogether is offered by Truscott (1996, 1999) in two successive papers, one dealing with the treatment of grammatical errors in writing and the other focusing on such corrective feedback in speaking activities. In the first of these, apart from presenting a range of theoretical arguments concerning the existence of the attested orders of acquisition and the occurrence of what he refers to as *pseudolearning* as well as reviewing the available empirical evidence, Truscott (1996) lists a number of practical problems involved in the correction of written errors. The most important of these include difficulty on the part of teachers to notice, understand, appropriately respond to and explain an error, and learners' inability to grasp, generalize and retain the metalinguistic explanation provided, all of which is compounded by the fact that teachers tend to be inconsistent and unsystematic in their corrections, whereas students may not have sufficient motivation to attend to numerous adjustments directed at the use of grammar forms. He also concurs with Krashen (1982) that error treatment is inherently unpleasant and discouraging since nobody enjoys the sight of excessive amounts of red ink on their written work, which may result in learners' use of less complex language and reluctance to take risks. Finally, he points to the time constraints which are an important factor for both students and their teachers because,

in his view, instead of working on error correction, the former would be much better off by channeling their energies into more productive learning activities, and the latter would have more time to illuminate more important aspects of writing such as appropriate organization or coherent argumentation. To quote Truscott (1996, p. 354), "[i]t can be concluded that one should not expect learners to benefit from grammar correction. Even if it could work in principle (which is doubtful), it is too inefficient to be of much use. So in at least the overwhelming majority of cases correction amounts to an unpleasant waste of time".

Many of these arguments are brought up one more time in his paper devoted to oral grammar correction (Truscott 1998), in which the discussion is mainly framed in terms of the problems likely to be encountered by teachers and learners alike. From the point of view of the practitioner, the most challenging issues involve understanding the nature of the error, presenting and explaining the correction in the right way, tailoring corrective feedback to the student, both with respect to affective considerations and individual differences, and ensuring that the task in hand retains its communicative focus and is not transformed into a controlled grammar exercise. When it comes to learners, they may experience difficulty in noticing and recognizing the correction, refuse to take the corrective move seriously, fail to process it due to limited attentional resources, the difficulty of the structure or fear of embarrassment, or have problems with understanding and then accepting the correction. Most crucially, though, they have to incorporate the correct form into their developing interlanguage systems, which, as discussed above, is by no means guaranteed even if they manage to immediately use the correct version in their output. Truscott (1998) is also of the opinion that these problems are not only alleviated but often even exacerbated when the teacher opts for delayed correction or elects to encourage peer correction. As is the case with negative feedback on students' written errors, also in this case he is adamant in his views and pedagogic recommendations. This is evident in his strong assertion that "[o]ral correction poses overwhelming problems for teachers and for students; research evidence suggests that it is not effective; and no good reasons have been offered for continuing this practice. The natural conclusion is that oral grammar correction should be abandoned" (1998, p. 453).

2.4 Rationale for the Provision of Corrective Feedback

Undeniably, many of the arguments proposed by the opponents of error correction presented at some length in the preceding section are quite coherent, mainly because they are grounded in influential theoretical positions, they draw upon concrete research findings, and they raise our awareness of some practical concerns that teachers and learners have to confront as they provide negative feedback on inaccurate target language forms and respond to such feedback. Nonetheless, there are even more numerous and much more convincing reasons why corrective feedback should be an integral component of teaching practices in the foreign

language classroom, both those that are more generally related to the beneficial contributions of form-focused instruction and those that are more specifically tied to the treatment of learners' oral and written errors. As is the case with the opinions expressed by the skeptics, the justification for this stance stems from the tenets of leading theories and hypotheses in the domain of second language acquisition, copious empirical evidence that has accumulated over the last three decades, as well as important pedagogical consideration.

Since the overriding goal here is to offer a compelling rationale for the effectiveness and utility of error correction, however, the discussion of the issues reflective of the three areas will be much more detailed, meticulous and thorough than above, which dictates that, for the sake of clarity, a separate subsection will be devoted to each of them. It should also be emphasized that the support for corrective feedback should not be regarded as unequivocal or unconditional, and it is by no means suggested that it should always be provided with little or no consideration of when and how it happens. In fact, the present author is aware that the extent to which error treatment can be expected to work is a function of a wide array of factors such as the techniques used, the targeted linguistic features, teachers' and students' beliefs, perceptions and preferences, individual variation, and the characteristics and realities of the particular instructional setting. Although these mediating variables are largely ignored in the following discussion, they are without doubt of paramount importance and their impact will thus be carefully considered in the remaining two chapters of the present work.

2.4.1 Theoretical Support

Before taking a closer look at the theories and hypotheses that can be cited in justification of the provision of corrective feedback on oral and written errors, several important caveats are in order. For one thing, it should be made clear that all of the theoretical positions described here are frequently referred to in more general deliberations over form-focused instruction, which only testifies to the soundness of the decision to view the treatment of learner errors as one of the options in teaching target language forms. It also has to be admitted that at least some of the theories and hypotheses were initially intended by their proponents to account for spoken interaction, as is the case, for example, with the Interaction Hypothesis (Long 1983, 1996), the Output Hypothesis (Swain 1985, 2005) or the Counterbalance Hypothesis (Lyster and Mori 2006). Still, they can also be invoked in support of written error correction in view of the fact that the distinctions between speaking and writing may become blurred in some contexts, and a particular instructional activity may consist of several phases, each drawing upon a different modality or a combination thereof. This is evident, among others, in the case of synchronous and asynchronous computer-mediated communication (e.g. Jepson 2005; Yilmaz 2011), the use of interactional negotiations to provide feedback on written errors after the completion of an assignment (e.g. Nassaji 2007a,

2011), and different types of text-reconstruction activities, such as dictogloss tasks (e.g. Fortune 2008) or text-reformulation tasks (e.g. Watanabe and Swain 2007).[6]

Another important qualification is that although the theoretical positions discussed below provide rather unequivocal support for corrective feedback, in most cases there is a caveat that such feedback should best be provided in the course of meaning and message conveyance, as when learners are requested to participate in a discussion, work on an information-gap activity, or employ a given TL feature to attain their interactional goals in focused communication or text-creation tasks. Nonetheless, some of them, such as the Noticing Hypothesis (Schmidt 1990, 2001), Skill-Learning Theory (Johnson 1996; DeKeyser 1998), Sociocultural Theory (Lantolf 2006; Lantolf and Thorne 2006, 2007) or Relevance Theory (Sperber and Wilson 1986; Niżegorodcew 2007a), provide a basis for reliance on error correction also during controlled activities, as long as some conditions are satisfied. It should also be pointed out here that even when conversational interaction is viewed as a prerequisite by some specialists, the empirical evidence they give in justification of their claims comes from studies where the requirement for meaningful communication is interpreted in a variety of ways and on some occasions the stretches of discourse subjected to analysis are not so meaning-oriented at all. For this reason, it is assumed here that different types of corrective feedback are theoretically plausible under different circumstances and their potential contributions during fluency-oriented tasks and accuracy-based activities will be considered in detail in Sect. 3.2 in Chap. 3.

Finally, it should be admitted that, given the complexity and multiplicity of theoretical positions on FFI, the choice of the theories and hypotheses outlined here is arbitrary and reflects the theoretical allegiances and pedagogical orientation of the present author, who, apart from carrying out research on second language learning and teaching, is also a methodologist and a practitioner, convinced of the importance of translating insights derived from empirical investigations into concrete and feasible guidelines for pedagogy. What is important, however, is that the case for the contribution of error correction is made both from the psycholinguistic and sociocultural standpoint, thereby subscribing to both what Sfard (1998) refers to as the *acquisition* and *participation metaphors*, and in fact attempting to reconcile the two. Although such a goal is seen as unattainable by some experts (cf. Zuengler and Miller 2006) due the disparate foci of these perspectives, it has been vigorously pursued by Swain and her collaborators (e.g. Swain 2000, 2006; Swain and Lapkin 2007; Suzuki and Itagaki 2009) and, in the view of the present author, it not only can, but in fact should be achieved in research into error correction, as this will ensure better understanding of this ubiquitous and to a large extent unavoidable aspect of foreign language instruction.

[6] A thorough overview of different types of text-reconstruction activities and the studies in which they have been utilized to date can be found in Pawlak (2011a), who explores their utility in teaching target language forms.

2.4.1.1 Noticing Hypothesis

A good starting point in this overview appears to be the Noticing Hypothesis (Schmidt 1990, 1994, 1995, 2001), not only because it provides the key underpinnings for many of the other theoretical perspectives discussed in this section, but also because it brings to the fore the simple, and yet not always a sufficiently emphasized fact that the provision of corrective feedback only makes sense if learners are capable of noticing and attending to the correction so that it can be interpreted as negative evidence and subsequently processed in the right way. In general, the hypothesis is predicated on the assumption that second language learning is not possible without a certain degree of *awareness at the level of noticing*, understood as the act of consciously registering a specific linguistic feature in the data afforded by the environment. As Schmidt (2001, pp. 3–4) explains, "(…) attention is necessary in order to understand virtually every aspect of second language acquisition (…). SLA is largely driven by what learners pay attention to and notice in target language input and what they understand the significance of noticed input to be". What this means in practice is that learners have to attend to the surface elements in the utterances in the incoming input, be they grammatical, lexical, phonological, sociopragmatic, discoursal or otherwise in nature, so that they can make internal comparisons between what they have said and the accurate version, or their communicative intention and the linguistic resources they have at their disposal. This enables them to identify the existing *mismatches*, or *gaps* (Schmidt and Frota 1986) and *holes* (Swain 1998), in their interlanguage systems, a step that is necessary for the conversion of input into intake and the activation of longer-term processes of language development.[7] In other words, to employ the terminology used by Doughty (2001), the *microprocesses* of *selective attention* and *cognitive comparison*, which are closely connected with noticing and thus open to external influences in the form of pedagogic intervention, are instrumental in making connections between known and unknown information, which paves the way for the usually automatic and inaccessible *macroprocesses* of *internalization of input*, *mapping*, *analysis* and *restructuring*.

Schmidt (1994, 1995, 2001) also sees a role for *metalinguistic awareness* which underlies learning at the higher level of understanding and may be a practical necessity for less salient or redundant aspects of the target language, such as similar sounds in the first or second language, differences in the use of tenses that are semantically close, or the properties of features that cannot be discovered from positive evidence alone (e.g. adverb placement, dropping pronouns in sentence-initial position). Although Schmidt recognizes that implicit, subliminal learning is possible, he is of the opinion that it is "of little practical value" (1995, p. 45) for

[7] A similar stance on the role of attention in second language learning is adopted by Robinson (1995), who considers it to be the result of the encoding of input in working memory, with such encoding being indispensable for the subsequent transfer of linguistic information to long-term memory. This clearly indicates that language learning cannot take place without noticing and a certain degree of attention (cf. Gass and Mackey 2007).

the acquisition of new linguistic material, since such non-conscious registration is mainly important for the activation of what the learner already knows. Given such premises, it is obvious that corrective feedback should be an integral part of teaching practices because it is the main tool by means of which the microprocesses of noticing, selective attention and cognitive comparison can be externally triggered and manipulated. Such feedback can be both explicit or implicit and input-providing or output-inducing, and while it is most conducive to learning in the context of meaningful communication, or fluency-oriented tasks, when form-function mappings are the most salient, it may enhance metalinguistic awareness or understanding as well in the course of controlled exercises, or accuracy-based activities.

2.4.1.2 Interaction Hypothesis and Output Hypothesis

Support for the treatment of learner errors also stems from the Interaction Hypothesis (Long 1983, 1996) and the Output Hypothesis (Swain 1985, 1995, 2005), both of which are very closely interwoven with the Noticing Hypothesis and can be viewed as falling within the scope of the *psychologically-grounded interactionist approach*. In the words of Gass and Mackey (2007, p. 176), this approach "(…) describes the processes involved when learners encounter input, are involved in interaction, and receive feedback and produce output [but it also] attempts to explain why interaction and learning can be linked, using cognitive concepts derived from psychology, such as noticing, working memory, and attention".

The beginnings of interest in the role of conversational interaction can be traced back to observational studies undertaken in the 1970s within the framework of discourse analysis, which led Hatch (1978, p. 404) to state that: "[o]ne learns how to do conversation, one learns how to interact verbally, and out of this interaction syntactic structures are developed". However, this line of inquiry only began to be pursued more vigorously with the emergence of the early version of Long's (1983) Interaction Hypothesis which, on the one hand, constituted an important extension of Krashen's (1985) Input Hypothesis in stressing the significance of the right kind of exposure, but, on the other, it all but rejected it by positing that the best way to ensure the provision of comprehensible input is through discourse modifications in response to interlocutor need rather than a priori linguistic modifications. It attributed particular importance to *negotiation of meaning*, defined as the interactive work done by interlocutors in order to ward off or resolve communication breakdowns which take place when the speaker's utterance is not clear or comprehensible to the listener. In such situations, the impending or existing communicative impasse is signaled by means of clarification requests, confirmation checks, comprehension checks and repetitions, which leads to *interactional modifications* involving simplification or elaboration of the initial message, thus making input comprehensible. Such stipulations spawned a substantial amount of descriptive, mainly laboratory-based research intended to investigate various patterns of negotiated interaction, pinpoint the impact of variables related to the type of task,

context and learner characteristics, and compare the value of native-speaker, simplified and interactionally modified input (e.g. during lectures). The main problem involved in such studies, though, was the fact that they were based on the assumption that if negotiation enhances comprehension, which is hypothesized to lead to acquisition, it must also logically contribute to acquisition, but failed to address that link directly, not to mention the fact that an abundance of negotiation of meaning may in fact obviate the need for learners to attend to morphosyntactic features in the input (cf. Pawlak 2004b, 2006a; Spada and Lightbown 2009).

These limitations are addressed in the revised formulation of the Interaction Hypothesis (Long 1996), which draws heavily upon Schmidt's (1990) Noticing Hypothesis in recognizing the importance in second language acquisition of individual cognitive processing manifesting itself in attention, noticing and cognitive comparison. As Long (1996, p. 417) explains, "(…) it is proposed that environmental contributions to acquisition are mediated by selective attention and the learner's developing L2 processing capacity, and these resources are brought together most usefully, although not exclusively, during *negotiation for meaning*" (emphasis original). Such interactive work, in turn, "and especially negotiation work that triggers *interactional* adjustments by the NS [native speaker] or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways" (emphasis original) (1996, pp. 451–452). To be more precise, it is perhaps more suitable to talk here not only about *negotiation of meaning*, which is the main focus of the early version of the hypothesis and is connected with genuine communication breakdowns or incomplete understanding, but also *negotiation of form*, which covers responses to inaccurate use of target language features, both when the error impedes the flow of conversation and when it is addressed for pedagogic purposes.[8] For this reason, the benefits of participation in negotiated interactions are no longer confined to enhanced comprehension of input data which increases the likelihood of successful acquisition and they include:

(1) access to better quality positive evidence as a result of greater-salience of form-meaning-function mappings and segmentation of the incoming input into linguistic units (cf. Pica 1996);
(2) the provision of negative evidence in the form of different types of corrective feedback which, "(…) may be facilitative of SL [second language] development, at least for vocabulary, morphology and language-specific syntax, and essential for learning certain specifiable L1-L2 contrasts" (Long 1996, p. 417);
(3) opportunities to produce modified output as a result of the information included in the feedback move, cognitive comparison and noticing the gap.

Since these claims reflect the theoretical underpinnings of the focus on form approach (Long 1991; see Sect. 1.6 in Chap. 1), it is obvious that the positive

[8] This reflects the distinction between *conversational* and *didactic reactive focus on form* introduced by Ellis et al. (2002) and discussed in Sect. 1.6.1 in Chap. 1.

contributions of error correction are limited to situations when it takes place in the course of communication-based activities rather than highly controlled exercises. Another important qualification is that feedback should preferably be of the input-providing type, particularly such that is implemented by means of recasts, which rephrase the erroneous utterance but preserve its central meaning, thus making it possible for the learner to detect the mismatches between the two juxtaposed versions, an assumption that is in line with the premises of Direct Contrast Theory proposed for first language acquisition (cf. Saxton 1997; see note 4 in Chap. 1). One ramification of such a stance is that the correction may not always be explicit enough to be interpreted as negative evidence (cf. Lyster 1998a), a point that will be revisited later in this work. It should also be emphasized that the learner is under no obligation to employ the accurate form in his or her own production, which indicates that one of the main envisaged contributions of negotiated interaction, that is the occurrence of output modifications, may remain largely hypothetical as there is little time and space for the student to even attempt self-correction.

The significance of output production is emphasized to a much greater extent in Swain's (1985, 1995, 2000, 2005) Output Hypothesis, which, despite the recent attempts to integrate it with more socially oriented perspectives on the role of interaction (see below), shares many of its theoretical assumptions with the modified version of the Interaction Hypothesis. It was proposed to accommodate research findings demonstrating that non-interventionist Canadian immersion programs are inadequate when it comes to the development of learners' productive skills, grammatical and sociolinguistic competence that would be comparable to those of their native-speaker peers,[9] and it attributed this failure to insufficient opportunities to engage in language production and receive requisite negative feedback on spoken and written output. In contrast to Krashen (1985), Swain (1985, 1995) argues that comprehending input cannot guarantee the acquisition of morphosyntactic features since it is primarily based on *semantic* and *strategic processing*, which utilizes contextual clues and prior knowledge, and is aided by reliance on language learning and the use of language strategies. Production, on the other hand, places much greater demands on learners since it requires them to fall back upon *grammatical*, *syntactic processing*, as they have to retrieve the needed linguistic features from their implicit and explicit second language knowledge stores in order to actually construct TL utterances. Swain (2005) elaborates on this argument in her more recent publications in terms of *depth of processing* as well as the concept of *integrative processing* (cf. Graf 1994), citing the study by Izumi

[9] The two competences are understood here in the same way as in the model proposed by Canale and Swain (1980) and later extended by Canale (1983). The scholars make a crucial distinction between *grammatical competence* (i.e. the knowledge of language subsystems), *discourse competence* (i.e. the ability to create coherent and cohesive spoken and written texts), *sociolinguistic competence* (i.e. the ability to use language appropriately in a given context and in a way which respects the sociocultural rules of use), and *strategic competence* (i.e. the ability to use requisite communication strategies to get intended messages across or to make communication more effective).

(2002), who suggested that, in comparison with input enhancement, output production is more likely to trigger deeper and more elaborate processing of the target form, establish more durable memory traces, and serve as a catalyst for making connections between individual items and reorganizing form-meaning mappings.

Moreover, Swain (1985, 1995) is adamant that production is insufficient for acquisition in and of itself, and learners have to be encouraged to produce what she refers to as *comprehensible* or *pushed output*, or utterances that do not only succeed in attaining the intended communicative aim but are also accurate, precise and appropriate. In her opinion, for language learning to take place and to be facilitated, contexts should be created where "(…) in speaking and writing, learners can 'stretch' their interlanguages to meet their communicative goals" (2000, p. 99). She explicates this stance in the following way (Swain 1985, pp. 248–249):

> (…) the meaning of 'negotiated meaning' needs to be extended beyond the usual sense of simply 'getting one's messages across'. Getting one's messages across can and does occur with grammatically deviant forms and sociolinguistically inappropriate language. Negotiating meaning needs to incorporate the notion of being pushed toward the delivery of a message that is not only conveyed, but that is conveyed precisely, coherently and appropriately. Being 'pushed' in output (…) is a concept parallel to that of the i + 1 of comprehensible input.

Clearly, for such pushed output to be generated, learners have to be informed that what they have said is lacking in some respects, either because it contains grammatical errors, it is not polite enough in a specific situational context, it is ambiguous and vague, or it does not fit in with the preceding utterance in terms of coherence and cohesion. This inevitably entails the provision of corrective feedback which makes it possible for learners to notice gaps and holes in their interlanguage systems, allows the formulation and testing of hypotheses, and enables syntactic processing of the available linguistic resources. Obviously, to produce all of these benefits, such feedback has to be output-inducing, as is the case with the use of clarification requests, such as 'What do you mean?', since only in this case can negotiation of form occur and the onus is on the learner to adjust the deviant utterance in accordance with native speaker norms. Although it is clear that learners will not always wish or be able to respond in the right way to the corrective move, providing them with opportunities for modifying and repairing their utterances is of vital importance in Swain's view because "(…) the modified, or reprocessed, output can be considered to represent the leading edge of a learner's interlanguage" (1998, p. 68). It should also be pointed out that while the hypothesis places a premium on the treatment of errors in meaningful oral communication, the metalinguistic or reflective function of output as seen by Swain (1995, 2005) also assumes an important role for negative feedback which is supplied in somewhat less communicative activities, as is the case with text-reconstruction tasks (e.g. Kowal and Swain 1994; Fortune 2008), and written assignments, as exemplified by text-reformulation tasks (e.g. Sachs and Polio 2007; Watanabe and Swain 2007).

2.4.1.3 Counterbalance Hypothesis

The three hypotheses discussed above as well as the empirical investigations they instigated provided a stimulus for yet another, relatively recent, theoretical position that can be invoked in support of error treatment, namely the Counterbalance Hypothesis, proposed by Lyster and Mori (2006). The hypothesis emerged in reaction to research findings demonstrating that the effectiveness of interactional feedback may be a function of the instructional setting and that corrective moves that result in uptake (i.e. reaction to the correction) and repair (i.e. repetition or incorporation of the correct form, or self- or peer-correction) in some contexts, fail to achieve this goal in others. It was also based on the results of a study in which Lyster and Mori (2006) compared the patterns of interactional feedback, uptake and repair in French immersion classes in Canada and Japanese immersion classes in the United States, which both took place in elementary school but differed with regard to their communicative orientation, as measured by the Communicative Orientation in Language Teaching (COLT) observation and coding scheme (Allen et al. 1984).[10] They discovered that prompts (i.e. feedback moves intended to trigger negotiation of form such as clarification requests) turned out to be more effective in generating uptake and repair in interaction in French immersion, which was primarily experiential (i.e. meaning-focused), whereas it was recasts that proved to have these effects in discourse in Japanese immersion, which included exponents of analytic (i.e. form-focused) teaching, such as choral repetition and reading aloud. These findings led Lyster and Mori to hypothesize that: "[i]nstructional activities and interactional feedback that act as a counterbalance to the predominant communicative orientation of a given classroom setting will be more facilitative of interlanguage restructuring than instructional activities and interactional feedback that are congruent with the predominant communicative orientation" (2006, p. 294). They subsequently go on to explain that (2006, p. 294):

> [i]nstructional counterbalance thus refers to interventions that differ from the instructional activities and interactional feedback that otherwise typify the communicative orientation prevailing in a given classroom. Therefore, counterbalanced instruction extends the scope of form-focused instruction by encompassing instructional practices that range from form-focused interventions at one end of the spectrum to meaning-focused interventions at the other.

The justification for this stance comes from the assumption that attention is a principal component of language learning and that the restructuring of interlanguage systems requires learners to take part in instructional activities that involve a shift in attentional focus, a good case in point being the techniques and procedures characteristic of Long's (1991) focus on form. According to Lyster and Mori (2006), however, such a

[10] COLT is a tool for observing interaction in second language classrooms designed to capture a range of its pedagogical and organizational features, the combination of which constitutes a reflection of the overall communicative orientation of a particular lesson. It is divided into two parts: (1) Part A, which describes instructional practices in terms of the content, focus and organization of activity types, and (2) Part B, which focuses on selected facets of the language produced by teachers and students.

shift is beneficial irrespective of whether it occurs from meaning to form in a primarily meaning-oriented context or from form to meaning in a predominantly form-oriented instructional setting, as in both cases learners are expected to extend additional effort to cope with such a change of focus, which is believed to strengthen the links between output modifications and processes taking place in long-term memory.

What has to be stressed at this juncture is that such an approach has far-reaching ramifications for form-focused instruction in general and the provision of corrective feedback in particular in the foreign language setting. The most important perhaps is that, similarly to the position adopted by Fotos (1998, 2005), it recognizes the existence of educational contexts in which a more traditional focus on forms rather than a focus on form or a focus on meaning tends to be the norm, and suggests ways in which it can be augmented through the inclusion of communicative tasks. Secondly, it underscores the importance of directing error correction at features which are the focus of prior or concurrent pedagogic intervention because in this way learners are primed as to how to allocate their attentional resources, and they are more likely to interpret the corrective moves in the right way and actually use them in conducting cognitive comparisons. Even though Lyster and Mori (2006) believe that input-providing recasts are the most suitable in such contexts, as they "(…) enable learners to reorient their attentional resources toward meaning in ways that avert overemphasis on form at the expense of meaning" (2006, p. 295), it can reasonably be assumed that other types of feedback, such as output-inducing prompts or explicit corrections, will also be useful, depending on the type of task and the extent to which it is seen as part of the regular instructional agenda. Seen in this way, perhaps somewhat against the intentions of its proponents or even to their chagrin, the Counterbalance Hypothesis can be said to provide support for different types of corrective feedback in different kinds of activities, on condition that the former are adjusted to the latter and the overall orientation of the setting is taken into account.

2.4.1.4 Relevance Theory

The way in which learners perceive different types of pedagogic interventions and react to them in various situations can also be explained within the framework of Relevance Theory (Sperber and Wilson 1986, 1987), a cognitive psychological theory drawing upon information processing accounts which attempts to expand upon two of Grice's (1975, 1989) central claims concerning human communication. According to these assumptions, the main feature of communication is the expression and recognition of intentions and the speaker's utterances automatically create a set of expectations which allow the listener to understand the intended meanings and messages, with those expectations being expressed in terms of the *cooperative principle* and the *conversational maxims* of *quality* (truthfulness), *quantity* (informativeness), *relation* (relevance) and *manner* (clarity). In contrast to the code model of communication, Sperber and Wilson (1986, p. 9) argue that sheer decoding of incoming messages is insufficient to comprehend the information conveyed because "(…) there is a gap between the semantic representations of sentences and

the thoughts actually communicated by utterances. This gap is filled not by more coding but by inference". In other words, listeners have to interpret in the right way not only the *informative intention*, or the speaker's wish to inform other people of something, but also the *communicative intention*, or the speaker's wish to inform others about his or her informative intention, because erroneous or imprecise interpretation of the latter may hamper complete understanding of the former. Since the very act of interpretation itself requires the expenditure of processing effort on the part of the interlocutor, in the opinion of Sperber and Wilson (1986), input is most relevant when it generates the necessary contextual effect or allows listeners to rely on their present knowledge to identify the requisite contextual assumptions in a particular situation, but at the same time is the least demanding in terms of the attentional resources and effort that have to be invested for this goal to be accomplished. In other words, given the receiver's expectation of relevance, the gap between the informative and communicative intention should be minimized.

An interesting application of the tenets of Relevance Theory to instructional discourse in the language classroom comes from Niżegorodcew (2007a, b, 2011), who adopts it as a point of reference for explaining such key aspects of classroom communication as the choice of the language of instruction, the role of teacher- and learner-centered discourse and, what is most germane from the perspective of the present discussion, the effectiveness of different types of corrective feedback during fluency-oriented tasks and accuracy-based activities. She advances the important claim that "(…) the distinction between primary linguistic data [i.e. positive evidence] and secondary linguistic data [i.e. corrective negative evidence] cannot be maintained with reference to instructed L2 teaching/learning contexts on account of the fundamental purpose of language instruction: focusing the learners' attention on L2 forms in order to enable them to fluently express meanings" (2007a, p. 149). What this means in practice is that teachers' feedback moves perform the dual function of providing reactive negative evidence and serving as models of communication in the second language, with respective foci on form and meaning. Therefore, the provision of corrective feedback can be more or less effective depending on whether the informative intention of supplying the accurate form or getting the student to attend to his or her erroneous output is reflected in the communicative intention of responding to an utterance in semantic terms (e.g. commenting on or echoing the meaning expressed). While there is no danger of a mismatch in accuracy-based activities where the corrective information conveyed by the teacher's utterance is interpreted as relevant because of the overall context involving focus on language forms, the situation is much more complicated in meaningful interactions in which learners may be in a quandary as to how to interpret the communicative intention, and may wind up regarding the pragmatic and not the corrective function as the most relevant, thus remaining oblivious to the latter. This explains why recasts are frequently ignored and fail to trigger uptake or repair and suggests that either the pedagogic intervention as such should be more explicit or the broader context should make students aware of the corrective function of the more implicit types of feedback, which would be in line with the claims of the Counterbalance Hypothesis but would ensure as well that the negative rather than positive evidence becomes the most relevant.

In the light of these assumptions, it is clear that Relevance Theory attributes a vital role to error correction as a mechanism which ensures the relevance of information about formal aspects of the target language, both when it occurs in the course of highly controlled text-manipulation activities, and during text-creation activities as well as focused and unfocused communications tasks. Moreover, such claims could be extrapolated to written corrective feedback because, although it is always explicit, the relevance of, say, direct correction accompanied by a metalinguistic explanation may be greater than more indirect techniques, such as color-coding or underlining, devoid of such additional explanations.

2.4.1.5 Skill-Learning Theory

Yet another theoretical position which lends extensive support to the provision of corrective feedback is Skill-Learning Theory, also known as Skill-Acquisition Theory, which originates from rule-based theories of automatization, in particular Anderson's (1983, 1995) Adaptive Control of Thought Theory, and has been extended to the area of language learning mainly through the work of Johnson (1996) and DeKeyser (1998, 2001, 2003, 2007a, b, c). DeKeyser (2007c, p. 97) describes the general assumptions underlying this theoretical stance in the following way:

> The basic claim (…) is that the learning of a wide variety of skills shows a remarkable similarity in development from initial representation of knowledge through initial changes in behavior to eventual fluent, spontaneous, largely effortless, and highly skilled behavior, and that this set of phenomena can be accounted for by a set of basic principles common to the acquisition of all skills.

This characterization indicates that the theory perceives language learning as identical with the process of the acquisition of other complex skills, such as driving a car, playing a musical instrument, excelling at chess or solving complex math problems. Accordingly, to be able to use a specific target language feature in spontaneous, time-pressured communication, it is necessary to convert initial declarative knowledge, which is conscious and explicit and can be derived through deduction or induction, into procedural knowledge, which is subconscious and implicit, a transformation that is postulated by the strong interface position (see Sect. 1.5 in Chap. 1).

An important qualification that was elaborated upon earlier in this work and discussed at some length by DeKeyser (2010) is that learners may never forget the initial conscious representation of the pertinent rules or not really have the opportunity to develop full-fledged implicit representation due to scant exposure and participation in conversational interactions. For this reason, the proponents of the theory prefer to talk about *automatized knowledge*, with such automatization being a matter of degree rather than an all-or-nothing affair, which may be functionally indistinguishable from implicit knowledge and perform just as well in genuine communication. Irrespective of whether the final product is entirely implicit or not, such a transformation is of vital importance as it speeds up the processes of grammatical, lexical and phonological encoding (i.e. the conversion of the preverbal message into a speech plan at the stage of message formulation; see Kormos 2006), and enables the

allocation of the limited attentional and working memory resources to higher level skills (e.g. planning the following discourse, determining message content, monitoring) rather than lower levels skills (e.g. the selection of the accurate linguistic forms), both of which ensure fluent performance in real-time meaning and message conveyance (Segalowitz 2003). Such a change involves movement through three stages that have been referred to as *cognitive*, *associative* and *autonomous* (Fitts and Posner 1967), or *declarative*, *procedural* and *automatic* (Anderson 1995), and it is both quantitative and qualitative in nature. The processes which are involved in the progress through the stages are *automatization*, which involves accelerating performance, reducing the incidence of errors, and diminishing interference from other tasks, and *restructuring*, thanks to which subcomponents of knowledge and the ways they interact are modified (cf. DeKeyser 1998, 2007a, b).

When it comes to pedagogical procedures, the move from initial declarative knowledge to final procedural knowledge as well as the operation of the processes of automatization and restructuring require that learners are provided with ample opportunities for practice. This practice, however, has to be of the right kind and it has to be carefully adjusted to the stage of development, namely the transformation of declarative knowledge into procedural knowledge and the automatization of the latter. While the first of these consists in the use of the new rules in understanding, constructing and manipulating correct sentences, which may entail reliance on controlled exercises (e.g. completion, paraphrase, translation), the second is a much more arduous goal that takes time and calls for *meaningful practice*, such which enables the use of the structures taught to accomplish genuine communicative goals and the establishment of the requisite form-meaning mappings. As DeKeyser (2007b, p. 292) argues, "[g]ood practice needs to involve real operating conditions as soon as possible, which means comprehending and expressing real thoughts, and this necessarily involves a variety of structures, some of which will be much further along the declarative-procedural-automatic path than others". The use of the targeted linguistic features in real-time communication is also indispensable for the simple reason that the effects of practice are highly skill-specific, as reflected in the concept of *transfer-appropriate processing*, which posits that the knowledge and skills learned or taught in one context or task can only be successfully employed in another if the cognitive operations involved are similar (cf. Lightbown 2008). This means that if learners only use particular structures in controlled exercises, no matter how many of them, this is unlikely to affect their ability to fall back upon them in conversation, and the same caveat applies to comprehension and production.

Clearly, if language learning is conceptualized in this manner, it fits in with the PPP procedure that was mentioned on several occasions in the previous chapter, on condition that the production stage is sufficiently emphasized and it includes a wide range of text-creation activities and focused communication tasks, necessitating the use of the targeted features in situations when the scant pool of attention has to be divided between form and meaning. This being the case, corrective feedback, both oral and written, facilitates the processes of automatization and restructuring in distinct ways at different points of development, since proceduralization will perhaps best be served by direct and immediate error correction during accuracy-based controlled exercises,

while fluency-oriented target language use required for automatization will benefit from the input-providing and output-prompting feedback moves, recommended, but also hotly debated, by the proponents of the interactionist approaches discussed above. More specific contributions of feedback in the skill learning framework are suggested by Leeman (2007), who argues that it aids the acquisition of declarative knowledge, it assists proceduralization, fine-tuning and automatization by indicating that greater reliance on rules is needed or the scope of these rules has to be adjusted, and it may prevent learners from automatizing incorrect forms. She also draws attention to the fact that error correction allows learners to divide a complex task into more manageable ones, which reduces the cognitive load and boosts performance, and enables them to attend to their own output, thus enhancing its accuracy or priming them to the future use of problematic forms.[11]

2.4.1.6 Connectionism

The case for error correction can also be made on the grounds of connectionism, which was briefly referred to in the discussion of issues related to explicit and implicit knowledge in Chap. 1. Connectionist accounts of language learning, also known as *parallel distributed processing* or *emergentist models* (e.g. Rumelhart and McClelland 1986; Ellis 2003), have more recently been discussed in terms of what Ellis (2007) calls the *Associative-Cognitive CREED*, which postulates that the process of second language acquisition can be described as: (1) construction-based, (2) rational, (3) exemplar-driven, (4) emergent, and (5) dialectic, with the first letters of these labels accounting for the acronym. As is the case with Skill-Learning Theory, the model has its roots in the field of cognitive psychology and is predicated on the basic assumption that languages are learned through the same cognitive mechanisms that are employed for the acquisition of other kinds of knowledge and, therefore, there is no need to posit the existence of a separate module dedicated to this task such as Universal Grammar. This is where similarities between the two theories end, however, because, as Ortega (2007, p. 228) writes, "[t]he Associative-Cognitive CREED explains language learning as, by and large, an implicit inductive task and, therefore, is committed to incidental learning and unconscious representations. That is human learning capacities are thought to result from the extraction of statistical patterns from the input". More precisely, it is assumed that language is represented in the mind of the learner by means of *constructions*, defined as form-meaning mappings that are conventionalized in the speech community, symbolic in the sense that

[11] Leeman (2007) discusses the cognitive demands of a task in terms of competition between *accuracy*, *complexity* and *fluency*, regarded as the main dimensions of communicative language performance (Skehan 1998, 2009; Skehan and Foster 2001; Housen and Kuiken 2009; Larsen-Freeman 2009), as well as competition between linguistic lower-level skills and non-linguistic higher-level skills such as abstract reasoning. The cognitive load is lessened when feedback is directed at a specific aspect of performance or it is provided after the conceptual components of the task have been completed.

particular linguistic features (i.e. grammatical, lexical, phonological) are linked with specific semantic, pragmatic and discourse functions, and acquired by communicating with others.[12] In effect, in the words of Ellis (2007, p. 78), "(…) an individual's creative linguistic competence emerges from the combination of two things: the memories of all of the utterances encountered in communicative situations, and the induction of regularities in those utterances based on frequency".

What this means in practice is that that language learning is *associative* in nature and mainly depends on the frequency of use of specific structures in the input since this frequency determines the activation of neural networks in the learner's brain, leading to strengthening and weakening of complex clusters of links between information nodes (Mitchell and Myles 1998; Ellis 2003, 2007). Critical as they might be in shaping acquisition, these frequency effects are mediated by the salience of the form, the importance of the function it performs from the point of view of successful communication, and interference from possible forms and interpretations in a particular context, both in one language and across different languages (cf. Ellis 2007, 2010). To give an example, learning phrases such as 'he lives' or 'she believes' does not involve the application of abstract rules but is the result of the frequent co-occurrence of the component parts in the input, which increases the strength of connections in the neural networks, both for the forms in question and the semantic and pragmatic function of the expressions. Because the 's' ending has little salience and is functionally redundant, more exposure will be needed than in the case of more salient and semantically important features, and some degree of abstraction and generalization will also be involved in learning morphological patterns of this kind. When it comes to the remaining tenets of connectionist approaches, it is posited that language processing is *rational* as human beings construct the best model possible based on their prior experience, and productive patterns and other rule-like regularities such as those in the examples given above are *exemplar-based*. Language is also regarded as a *real-time activity*, it is composed of a number of interacting elements, it is *adaptive*, and it remains in a continuous state of flux, whereas its acquisition entails constant search for optimal solutions based on the tension between the output reflecting the current stage of interlanguage development and the feedback accrued from the ambient environment (cf. Ellis 2003).

The last property mentioned above, namely the *dialectic* nature of language acquisition, helps explain why a theory that underscores the primacy of incidental learning also envisages a place for form-focused instruction in general and error correction in particular. The need for pedagogic intervention is recognized even by staunch supporters of connectionism such as Ellis (2002, p. 174), who claims that "language acquisition can be speeded up by instruction", and MacWhinney (1997, p. 278), who argues that "[s]tudents who receive explicit instruction, as well as

[12] This view draws upon Construction Grammar (Goldberg 1995, 2006; Tomasello 2003) as well as other theories of first language learning (e.g. Langacker 1987, 2008; Taylor 2002; Croft and Cruise 2004) and second language acquisition (e.g. Robinson and Ellis 2008a, b), falling within the scope of cognitive linguistics (cf. Ellis 2010).

implicit exposure to forms, would seem to have the best of both worlds. (…) From the viewpoint of psycholinguistic theory, providing learners with explicit instruction along with standard implicit exposure would seem to be a no-lose proposition". Although they emphasize that the essence of second language acquisition and simultaneously the requirement for fluent performance is exposure to and internalization of form-function mappings in the input as well as the corresponding regularities, they acknowledge the utility of explicit instruction as long as the rules are accompanied by examples illustrating their actual use. As Ellis (2002, p. 175) explains, pedagogical intervention is necessary on account of the fact that "(…) without any focus on form or consciousness raising (…) formal accuracy is an unlikely result; relations that are not salient or essential for understanding the meaning of an utterance are otherwise only picked up very slowly, if at all". Additionally, form-focused instruction is beneficial as it fosters the acquisition of complex associations, enhances low-salience cues that compete with others, often under the influence of the first language cue strength hierarchy, directs attention to specific types of input, narrows the hypothesis space, tunes the weights in neural networks, consolidates memory traces, and acts as a priming device (MacWhinney 1997, 2001; Ellis 2005).

All of this indicates an important role for oral and written corrective feedback which, similarly to Skill-Learning Theory, can be provided in a multitude of ways, both during the completion of traditional exercises and communication-based tasks. In the former case, it will aid the understanding, application and retention of the pertinent rules and sensitize learners to the occurrence of the linguistic features taught in the input, while in the latter it will facilitate the noticing of non-salient and semantically redundant items, and foster the fine-tuning of the interlanguage system. It is also worth mentioning at this point Leeman's (2007) interpretation of the role of reactive negative evidence in MacWhinney's (1987) Competition Model, one manifestation of the Cognitive-Associative CREED, which assumes that positive evidence for a specific form and the meaning it encodes functions as negative evidence for all the other competing forms and meanings, thereby apparently downplaying the need for instruction and correction. She argues that even in this case input containing a corrective move that helps the learner detect the error is beneficial to acquisition, as it raises his or her awareness as to the language-internal cues that are most likely to prevail in a situation when a conflict between target language forms occurs. In her view, such awareness will increase future reliance on the cues characterized by stronger conflict validity and decrease the use of those whose validity is weaker.

2.4.1.7 Sociocultural Theory

While all the theoretical positions discussed thus far are psycholinguistic in nature and represent to a greater or lesser extent the computational model of second language acquisition, a convincing justification for the treatment of learner errors can also be derived from socially oriented accounts of that process, the best example being Sociocultural Theory (Lantolf 2006, 2011; Lantolf and Thorne 2006, 2007;

Lantolf and Beckett 2009).[13] Building upon the premises of Vygotsky's (1978) social constructivism, the theory views the mental functioning of human beings as a process that is mediated by cultural artifacts, activities and concepts, with language structure, organization and use being the primary tools of such *mediation*, allowing the achievement of *self-regulation* where the need for external support is minimized or eliminated altogether. To be more precise, human cognitive development, including the learning of first and additional languages, first takes place on the social plane in collaboration with others, and only later does it happen on the cognitive plane, when higher-order thinking develops and complex abilities and skills become available to an individual thanks to the process of *internalization*. The main process which renders this development possible is interaction with an individual who is more skilled in a particular area, known as *the more knowledgeable other*, in the *zone of proximal development* (ZPD), which Vygotsky (1978, p. 86) describes as "(…) the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers". Engagement in learning tasks in such propitious circumstances "(…) enables an individual to experience success in doing things that they cannot otherwise do alone" (Lantolf 2011, p. 305) and as such is crucial to the internalization of externally-aided activities and ultimate self-regulation. As regards second language learning, the theory lays emphasis on the importance of *private speech*, which helps learners to regulate their mental functioning, and the provision of *scaffolding* by the teacher or more advanced language user, which allows the creation of *vertical constructions*, or the use of more complex utterances over several turns. Also of relevance are negotiation of form and meaning, collaborative construction of second language knowledge, or even the execution of challenging form-focused activities with the help of the teacher and other students (Lantolf and Thorne 2006, 2007; van Lier 2000; Swain 2000; Ohta 2001; Swain et al. 2009).

Considering the vast array of ways in which interaction in the zone of proximal development can be conceptualized and implemented, it is evident that Sociocultural Theory ascribes a facilitative role to different types of form-focused instruction, ranging from entirely explicit, as when rules are discovered and applied collaboratively, to quite implicit, as when more difficult utterances are co-constructed by a more proficient conversational partner. Whatever the variant, there is clearly a place for the provision of corrective feedback which can contribute to the process

[13] It should be pointed out that there have been attempts to reconcile psycholinguistic and sociocultural accounts of language acquisition. One of them, mentioned earlier in this chapter, has been undertaken by Swain within the framework of the Output Hypothesis and is evident in the concepts of *collaborative dialogue* (Swain 2000, 2005) and *languaging* (Swain 2006). Another is made by Lantolf and Thorne (2006) and Lantolf (2011), who argue that Sociocultural Theory can successfully be integrated with cognitive linguistics to create a unified and effective approach to instructed language acquisition. To be more precise, the latter is viewed as a potential source of conceptual knowledge that is supplied in the first stage of the so-called *systemic theoretical instruction* or *concept-based instruction* that draws on the principles espoused by the former.

of internalization as long as it is adjusted to the learner's level of development and thus constitutes part of his or her zone of proximal development. This could involve, for example, reacting to learners' errors by providing hints or explanations as they are struggling with translation, transformation or completion exercises, commenting on the inaccurate use of structures that are believed to be within the students' grasp by underlining and commenting on them in pieces of writing, or pushing learners to modify their inaccurate output by initiating negotiation of form as they are trying to convey a genuine message during whole-class discussion or group work.

A very instructive study on the use of error correction in line with the assumptions of Sociocultural Theory was conducted by Aljaafreh and Lantolf (1994). As Lantolf and Thorne (2007, p. 214) illuminate, in contrast to the numerous studies of corrective feedback grounded in interactional, psycholinguistically-oriented approaches, in such research:

> (…) corrective feedback and negotiation are conceptualized as a collaborative process in which the dynamics of the interaction itself shape the nature of the feedback and inform its usefulness to the learner (or learners in the case of more symmetrical peer interaction). There is also a concern with the timing and quality of the feedback as it aligns with the participant's ZPD.

In line with such guidelines, Aljaafreh and Lantolf (1994) investigated the evolving nature of negotiation between learners and their teacher, paying particular attention to the relevance of different types of corrective feedback determined on the basis of a student's responses. They based their reasoning on the preliminary assumption that such responses were as important indicators of progress in a second language as the actual forms produced by the students and looked in particular at the internalization of the negotiated solutions, as manifested by the learners' ability to utilize external assistance in the form of error correction. The participants, who were three ESL learners in an early-intermediate writing and reading course, were asked at the beginning of each sessions to read through their written assignments and to pinpoint problematic areas and mistakes. This was followed by reading the texts sentence by sentence together with the tutor who would start a discussion whenever a problem was identified. Each time prompts were used, which were general and implicit at the beginning, such as 'Do you notice any problem?', but gradually became more specific and explicit, such as 'Pay attention to the tense of the verb', and, in situations when assistance was still needed, direct correction took place and a grammatical explanation was provided (Aljaafreh and Lantolf 1994, pp. 469–470).

The analysis of the interactions showed that the learners gradually became more independent with respect to their ability to notice and self-correct their errors, moving through a series of stages characterized by differing quantity and quality of external assistance required for this to happen, which was interpreted as a sign of transition from interpsychological to intrapsychological functioning, or development from other-regulation to self-regulation. On this basis, Aljaafreh and Lantolf (1994) developed a thirteen-point scale of feedback practices, ranging from broad and implicit options involving the use of leading questions to specific and explicit options in the form of direct correction and explanation. The application of this tool in tracing the category and type of corrective feedback led them

to conclude that it is vital to assess not only the current level of development as indicated by test scores, but also the potential level of development. Yet other conclusions they arrived at were that the same error may be a manifestation of different problems for different learners, corrective feedback should be viewed as only potentially relevant for learning, and it should be dynamic in nature if it is to respect what constitutes the learner's ZPD at a particular point in time.

2.4.1.8 Delayed-Effect Hypothesis

To finish off the discussion of the theoretical support for error correction, it is warranted to mention what has come to be known as the Delayed-Effect Hypothesis (Lightbown 1985, 1998), according to which the effects of pedagogic intervention may not be immediate in the sense of translating into error-free performance, but they will become apparent after a certain amount of time has elapsed. In other words, although the learner may be unable to self-correct in response to an explicit indication of an error or a metalinguistic explanation in a controlled exercise, a recast or a prompt delivered during a communicative activity, or a direct comment on the margin of a written assignment, it should not be taken to mean that the time has been wasted and the correction is ineffective and inefficient, because its benefits can be reaped at a future time. In psycholinguistic terms, the provision of negative evidence could facilitate the acquisition of the targeted linguistic feature when learners have reached the requisite stage of interlanguage development (cf. Ellis 1997), or act as an advance organizer that will sensitize them to this form when it becomes available in the communicative input. In the latter case, we would be dealing with the so-called *priming effect* which has been hinted at in the preceding characterization of some of the theories and hypotheses since, to quote Doughty (2001, p. 250), "(…) it appears entirely plausible that some kind of cognitive preparation for focus on form would facilitate learner noticing of relevant input". It is also possible to talk about the correction helping students *store a trace* that will promote deeper levels of processing the next time the form is encountered (cf. Stevick 1996; Larsen-Freeman 2003), or the existence of an *incubation period* (Gass 1997, 2003) which is necessary before the required changes can take effect, a proposal that helps explain how utterances generated on the basis of explicit rules or memorized chunks can serve as auto-input to the learner and lead in due course to the restructuring of the interlanguage system (cf. Spada and Lightbown 1993, 1998). What is more, the concept of the delayed effect of error correction can also be applied to the Counterbalance Hypothesis and Relevance Theory since a consistent focus on a specific error over an extended period of time is likely to override the predominant orientation of the instructional context and enhance the relevance of corrective information that might normally go unnoticed, respectively. Last but not least, the recognition of the fact that second language development in reaction to corrective feedback is all but instantaneous also emanates from Sociocultural Theory as the move from external to internal regulation is bound to take time, an assumption that is well attested to in the study carried out by Aljaafreh and Lantolf (1994).

2.4.2 Empirical Evidence

As was the case with the theoretical assumptions discussed in the preceding sections, several important qualifications should be made before reviewing the research findings testifying to the effectiveness of the provision of corrective feedback in the foreign language classroom. In the first place, much of the empirical evidence of this kind derives from studies of the overall effects of form-focused instruction, which should not come as a surprise given the fact that, as was extensively demonstrated in Sect. 1.6 in Chap. 1, the treatment of learner errors is considered as one of the main options that teachers have at their disposal when introducing and having students practice targeted linguistic features. As a result, any overview of research into the contributions of error correction would have to be deemed incomplete, were it to take no heed of the outcomes of these more general empirical investigations. Still, since overviews of this research can be found in a number of other recent publications (e.g. Ellis 2001, 2005a, 2006b, 2010a; Pawlak 2006a, 2007a; Loewen 2011; Nassaji and Fotos 2011; Spada 2011) and exhaustive presentation thereof falls beyond the scope of this work, the discussion in the present section will be rather concise and confined to major generalizations as well as representative review papers and research syntheses and meta-analyses.

When it comes to research endeavors specifically undertaken to investigate the effects of error correction, it should be pointed out that although, on the whole, the studies of oral and written corrective feedback have been conducted separately and the two lines of inquiry have affected each other minimally (Sheen and Ellis 2011),[14] in some cases, review papers, state-of-the-art articles or meta-analyses are informed by both research strands (e.g. Russell and Spada 2006; Sheen 2010a, 2010b; Sheen and Ellis 2011), which makes it difficult to deal with them independently at all times. Yet another caveat pertains to the type and scope of the findings of empirical studies that are considered in the present section, because it is possible to pinpoint quite disparate research foci both in the case of oral and written error correction. On account of the fact that the present chapter is primarily intended to provide an overview of conflicting perspectives on reactive negative evidence and make a strong case for its overall usefulness, emphasis will be placed on studies that have examined the effects of correction globally and the recent syntheses and meta-analyses of the relevant empirical investigations, separately for the treatment of errors in speech and writing whenever possible. This means that research exploring the effectiveness of different types of correction, the impact of individual variation and learners' cognitions, reactions and engagement is taken into account here only to the extent to which it figures in the review papers just mentioned, whereas closer inspection of the results of such studies is reserved until Chap. 4. Finally, a decision was taken to include in the current discussion the research projects that tap learners' and teachers' beliefs, expectations and

[14] As will be seen from Sect. 3.6 in Chap. 3, the domain in which the two lines of inquiry can be said to converge to a considerable extent is research into computer-delivered negative feedback.

preferences concerning the provision of corrective feedback, for the reason that these perceptions should indubitably be taken into account if foreign language pedagogy aspires to be learner-centered and the guidelines furnished by scholars are to stand the chance of being transformed into actual instructional practices. Similarly to other studies cited in this section, however, the focus will be on the need for correction and its perceived effectiveness rather than predilections for a specific way in which it is handled since, again, such issues will be touched upon when necessary in Chap. 4 when going over the results of research into different feedback options as well as factors impacting them.

2.4.2.1 Research into Form-Focused Instruction

Despite occasional arguments to the contrary, which mainly come from Krashen and his faithful acolytes, the facilitative effects of form-focused instruction are taken for granted by the vast majority of theorists and researchers, although controversies undeniably abound as to its target, scope, manner, integration, or timing (cf. Ellis 2006b, 2008; Larsen-Freeman 2010a; Nassaji and Fotos 2011). This conviction permeates virtually all the review papers that have been published in the last decades and has become increasingly less qualified in most recent publications, with the caveat that the ways in which formal instruction is understood by their authors vary widely. Ellis (2010a, p. 452) points out, for example, that "(…) there is ample evidence that both proactive and reactive explicit FFI assist acquisition (…) [and] that this assistance can be seen even in measures of unplanned language use, which are hypothesized to tap L2 implicit knowledge". Similar assertions come from Nassaji and Fotos (2011, p. 14), who comment that "(…) if the goal of second language learning is to develop communicative competence and to enable learners to use language accurately and fluently for communicative purposes, a focus on grammar must be incorporated into L2 communicative instruction", and Spada (2011, p. 233), who writes that "[w]hile more work is needed to further investigate the question as to what type of knowledge results from instruction, there is increasing evidence that instruction, including explicit FFI, can positively contribute to unanalyzed spontaneous production, its benefits not being restricted to controlled/analyzed L2 knowledge". The very same specialists, however, emphasize the fact that the available research findings point to a number of limitations of formal instruction as well as the requirements that should be satisfied for it to produce the expected outcomes. They indicate, among other things, that the effects of instruction are not always positive, there are constraints on the teachability of some linguistic features, it affects different forms in different ways and to a different extent, its contributions may not be immediate and may not be retained over time, they are mediated by a whole gamut of individual differences, successful intervention has to be multifaceted, and teachers should be eclectic in their choice of instructional approaches (cf. Ellis 2008; Nassaji and Fotos 2011). Obviously, all of these important observations apply in equal measure to the provision of corrective feedback which is an integral part of form-focused instruction.

In recent years, FFI research has mainly been conducted with the purpose of comparing the relative effectiveness of different techniques and procedures (e.g. explicit and implicit, rule provision vs. consciousness-raising, production-oriented and comprehension-based, etc.) and, on a much smaller case, the impact of individual, linguistic and situational factors on learning outcomes (Ellis 2008, 2010a; Larsen-Freeman 2010a; Nassaji and Fotos 2011; Ur 2011). Insightful as they are, the findings of such studies will not be described here because it would be impossible to give justice to them in this limited space and they are not at any rate directly germane to the present discussion which is concerned with the global effects of formal instruction. These general contributions are typically considered with reference to comparisons between naturalistic and tutored learners and between meaning-focused and form-focused instruction, the impact of pedagogic intervention on the orders and sequences of acquisition, overall second language proficiency, the rate of acquisition and the ultimate level of attainment, as well as the effects of instruction on production accuracy, both immediate and longer-term (Ellis 1994, 2008; Pawlak 2006a). The most revealing and thus the most pertinent to the present discussion are studies falling into the last category since determining learning outcomes by means of establishing gains in production accuracy on posttests in comparison with pretests, sometimes coupled with measures of comprehension ability, has become the standard procedure in present-day FFI research. Given the wealth of such empirical evidence and the fact that most of the studies have aimed to appraise the utility of specific instructional options, only two well-known overviews of such research will be considered here, namely the often-cited synthesis and meta-analysis conducted by Norris and Ortega (2000, 2001) and the somewhat later review paper penned by Ellis (2002a).

When it comes to the former, Norris and Ortega (2000, 2001) calculated, combined and compared the effects sizes, established with the help of Cohen's *d*, for a total of 49 experimental and quasi-experimental studies exploring the effects of form-focused instruction, published between the years 1980-1998, in order to answer research questions concerning the effectiveness of instruction, the value of different types of FFI, the durability of treatment gains, as well as the impact of outcome measures and the length of the intervention. They concluded that "(…) L2 instruction can be characterized as effective in its own right, at least as operationalized and measured within the domain" (2001, p. 192). As for the remaining issues, the analysis showed that explicit treatments were superior to implicit treatments, even though the gains were not carried over from pretests to posttests in their entirety, the effects of the intervention were generally durable,[15] FFI was found to be more effective on measures of explicit rather than implicit knowledge, and the extent of improvement was influenced by the length of the treatment.

Even though the review carried out by Ellis (2002a) involved only 11 experimental and quasi-experimental studies, six of which were included in Norris and

[15] Evidence for the durability of pedagogic intervention was also reported by Keck et al. (2006) in their meta-analysis of studies investigating the effectiveness of task-based instruction. It will be considered later in this section, however, because it is more relevant to the discussion of the contributions of error correction rather than broadly defined form-focused instruction.

Ortega's (2000) meta-analysis, its significance lies in the fact that it explored the effects of form-focused instruction on the development of implicit knowledge, operationalized as the subjects' performance in free production, such as is required in focused communication tasks that fulfill Loschky and Bley-Vroman's (1990) condition of task-essentialness. It is also worth mentioning that as many as four of them, mainly the most recent included in the analysis, operationalized the treatment as some form of error correction. Apart from the overall impact of the intervention in terms of pretest–posttest gains, he was also interested in the role of such mediating variables as the age of the subjects (younger vs. older, with the cut-off point at the age of 12), the nature of the target structure (formulaic, morphological or syntactic), the extent of the treatment (extensive vs. limited, with the distinction being based on whether it was more than 2 h or one or two tasks), the type of instruction (focus on form vs. focus on forms), and the measure (oral as opposed to written free production). His overall conclusion is very similar to that reached by Norris and Ortega (2000, 2001) as he comments that "(…) the analysis demonstrated that FFI results in acquisition at least sometimes, and that when it does the effects are durable" (2002a, p. 233). He concedes, however, that the studies do not provide data concerning the quality of the subjects' performance, particularly with respect to fluency, which means that they could have relied on their highly automatized explicit knowledge.[16] As for the variables influencing the effects of form-focused instruction, the most important turned out to be the complexity of the structure being taught, with simple morphological features responding better than complex areas of syntax, the extent of the intervention, with longer treatments being more effective than shorter ones, and the availability of the targeted form in the input accessible to the learners outside the classroom.

2.4.2.2 Early Studies of Error Correction

Moving on to empirical investigations specifically designed to investigate the link between the provision of corrective feedback and acquisition, it is perhaps fitting to start this overview with examples of earlier research. In the case of oral correction, such research is understood here to include studies that were not inspired by the focus on form approach (Long 1991) and interactionist theoretical positions (Swain 1995; Long 1996), whereas, in the case or written correction, it is taken to encompass research projects that were conducted prior to Truscott's (1996) critique (see earlier in this chapter).

As regards the former, Ramirez and Stromquist (1979), for example, found a positive correlation between the treatment of learners' errors and gains in general

[16] As was mentioned in Sect. 1.5 in Chap. 1, it may be irrelevant whether learners rely on their implicit or highly automatized explicit (procedural) knowledge in the performance of such tasks in the light of DeKeyser's claim that the two types of representation may be functionally indistinguishable in some situations, and implicit knowledge may be difficult or even impossible to develop anyway in the case of limited exposure (cf. DeKeyser 2003; DeKeyser and Juffs 2005).

second language proficiency, but it should be noted that no attempt was made to determine whether the correction of specific errors led to the subsequent elimination of the incorrect form. Lightbown and Spada (1990), in turn, reported that reactive negative evidence delivered during communicative lessons conducted as part of an intensive ESL program contributed to diminished frequency of some types of errors, such as the use of 'It has' instead of 'There is'. In yet another study, Carroll, Swain and Roberge (1992) demonstrated that corrective feedback aided learners in distinguishing between different types of French nouns, but the positive effects were restricted to the words that were subjected to the treatment and failed to be generalized to novel forms, which suggests the occurrence of *item learning* rather than *system learning* (see e.g. Hulstijn and de Graaff 1994; Ellis 1997 or DeKeyser 2010, for a discussion of this distinction).

As for the latter, studies of the effects of written corrective feedback were few and far between prior to the mid-1990s owing to the fact that writing was first considered of lesser importance than other skills and later it was taught in accordance with the principles of the process paradigm and the non-interventionist approaches, both of which relegated accuracy to the back seat (Ferris 2010). Nonetheless, just as Truscott (1996) succeeded in locating research projects which cast doubt on the positive role of correction, it is also possible to track down a number of early empirical investigations that provide grounds for a more optimistic conclusion. These include, for instance, the studies by Landale (1982), Robb et al. (1986) or Frantzen (1995), which differed in their design to some extent (e.g. the number of groups, duration, type of student writing, specification of categories of errors, types of feedback provided, measures of learning outcomes), but all of which found improvement in accuracy over time.[17]

2.4.2.3 Recent Studies of Error Correction

More recent research into the effectiveness of oral and written corrective feedback can in both cases be divided into studies that examine the immediate contributions of correction, in the sense that they are limited to specific lessons, assignments and instances of error, and such that investigate the impact of error treatment in the long run and examine the subjects' ability to generalize beyond the particular forms that were the focus of pedagogic intervention.

The first category includes research projects the were mentioned in Sect. 2.3 as part of the discussion of the reservations concerning the utility of correction on account of the fact that, due to their design, they fail to provide evidence for second language development over time. As will be recalled, these are descriptive

[17] It is interesting to note at this point that some of the studies that Truscott (1996) cites in support of his claim that written corrective feedback is ineffective are interpreted by Ferris (2004) as providing evidence that it works, good examples being research projects by Kepner (1991) and Sheppard (1992), mentioned earlier in the present chapter.

classroom discourse studies examining the types and instant effects of reactive focus on form (e.g. Lyster and Ranta 1997; Panova and Lyster 2002; Sheen 2004; Pawlak 2005a, 2009a; Lyster and Mori 2006) and revision studies investigating the impact of correction on the accuracy of subsequent versions of the same text (e.g. Fathman and Whalley 1990; Ashwell 2000; Ferris and Roberts 2001; Chandler 2003; Ferris 2006). While the criticisms and doubts presented above are valid to some extent, an equally, if not more, plausible interpretation could be that if learners manage to eliminate errors in their subsequent output, be it a response to the teacher's corrective move or a revised draft, it does testify to the effectiveness of the intervention, and lack of evidence that they would be able to modify their oral or written production in a similar way or apply the rule to other forms after some time cannot be automatically taken to mean that this does not happen. Moreover, even when they cannot self-correct and use the target linguistic feature accurately in response to negative feedback, it could still be argued on the basis of the Delayed-Effect Hypothesis (see Sect. 2.4.1.8) that the pedagogic intervention is facilitative as it could leave a memory trace or prime future noticing. Truth be told, it seems to be injudicious, to say the least, to offer a critique of error correction based on studies which demonstrate that it works, even if these beneficial effects cannot be shown to extend beyond one exchange, task, lesson or writing assignment.

The second strand groups together experimental and quasi-experimental, laboratory and classroom-based studies which have primarily looked at the acquisition of specific features in response to different types of oral (e.g. Lyster 2004; Ammar and Spada 2006; Ellis et al. 2006; Ellis 2007; Loewen and Nabei 2007; Sheen 2007a; Ammar 2008; Pawlak 2008b; Lyster and Izquierdo 2009; Sauro 2009; Erlam and Loewen 2010; Gatis 2010; Nipaspong and Chinokul 2010; Yang and Lyster 2010; Saito and Lyster 2012) and written (e.g. Bitchener et al. 2005; Sheen 2007b; Bitchener 2008; Bitchener and Knoch 2008, 2009, 2010; Ellis et al. 2008; Sheen et al. 2009) corrective feedback over time and produced unequivocal evidence that pedagogic intervention of this kind is effective. Since such empirical investigations have mainly explored the efficacy of correction in terms of some mediating variables, such as feedback type, target language form, individual differences, or learner noticing and response, they will be discussed in more detail in Chapter Four and thus will not be considered here, all the more so that many of them have been included in the review papers and syntheses presented below. It seems warranted, though, to mention two studies that were inspired by Sociocultural Theory and the notion of interaction in the zone of proximal development, but are also longitudinal in their design and have provided convincing evidence for the contributions of interactional corrective feedback on inaccurate forms in learners' written production (see Sect. 2.4.1). The first one was conducted by Aljaafreh and Lantolf (1994), it was qualitative in nature and was already described at some length earlier in the present chapter. The second, undertaken by Nassaji and Swain (2000), incorporated a microgenetic perspective within an overall experimental design and examined the effectiveness of corrective feedback in promoting the acquisition of English by two Korean learners. It turned out that

the subject who received assistance within her ZPD, fashioned after the explicit-implicit scale devised by Aljaafreh and Lantolf (1994), arrived at the correct form with increasingly less direct intervention and employed it correctly on a posttest in the form of a cloze test based on a composition the learner had previously written. By contrast, no such effects were found for the other learner who received assistance in a random manner.

Finally, support for the utility of error correction also comes from studies investigating the effectiveness of the so-called *dynamic written corrective feedback*, or such that addresses a variety of errors in accordance with the assumption that the intervention should reflect individual learner needs, as well as being manageable, meaningful, timely and constant for teachers and learners (Evans et al. 2010; see also Sect. 3.5.4.2 in Chap. 3). One such research project was conducted by Evans et al. (2011), who demonstrated that students who received such feedback over the period of one semester outperformed the controls who attended a traditional process writing course on a posttest, and improved dramatically in comparison to the pretest, while the scores of the control group deteriorated over time.

2.4.2.4 Review Papers and Research Syntheses and Meta-Analyses

Recent years have yielded several important review papers devoted to research into the occurrence and effectiveness of corrective feedback as well as influential syntheses and meta-analyses of the studies conducted to date, although it must be admitted that most of them have dealt with oral rather than written error correction. It perhaps makes sense to first offer insight into publications in which the results of research projects on the treatment of inaccuracies in learners' spoken and written error are considered together. Two of these are state-of-the art papers by Sheen (2010a) and Sheen and Ellis (2011), the first of which is relatively short as it serves as an introduction to a special topical issue of *Studies in Second Language Acquisition* and concentrates on general contributions of corrective feedback, the effectiveness of its main types, factors influencing this effectiveness and methodological issues. The second is part of an edited volume on research into second language teaching and learning (Hinkel 2011b), and it touches upon the differences between oral and written correction, theoretical support for its delivery, the pedagogical choices teachers have at their disposal and the outcomes of relevant empirical investigations. Both of them, however, reach similar conclusions, namely that, as Sheen and Ellis (2011, p. 605) point out, "(…) there is now clear evidence that oral CF – in one form or another – can benefit acquisition", but at the same time caution that "[o]ne or two studies showing that focused written CF can lead to acquisition are unlikely to convince the skeptics" (2011, p. 607). They also underscore the multitude of factors that impinge on the value of correction, many of which will figure prominently in the research syntheses and analyses reported below and will be considered in the remaining two chapters of the present work, and the importance of research in this area for reconciling theory and practice, thus bridging the gap between the worlds of theorists and researchers, on

the one hand, and teachers, on the other (cf. Ellis 1997, 1998; Pawlak 2007c). As Sheen (2010a, p. 177) insightfully remarks:

> One of the key contributions CF research has made to date is to highlight the importance of taking into account multiple factors in explanations of SLA. In the case of CF, these factors include feedback type, error type, interaction type, mode (oral vs. written vs. computer-mediated), L2 instructional contexts, age, proficiency, L1 transfer, learner orientation, anxiety, and cognitive abilities. CF research is also of obvious relevance to language pedagogy: It helps to inform when, how, and how often learner errors should be corrected. CF is an ideal object of inquiry for researcher-teacher collaboration and constitutes an area of inquiry that can connect theory, research and practice.

A synthesis and research meta-analysis conducted by Russell and Spada (2006) also examines the joint contributions of oral and written corrective feedback. The scholars set out to determine the general effectiveness of feedback for learning a second language, to identify the features and variables included in primary research, as well as to establish whether such factors mediate the benefits of error correction. They initially located and coded 56 studies of negative feedback on spoken and written errors conducted between the years 1977 and 2003, either in a classroom or a laboratory context, but only 15 of these provided sufficient data for the calculation of effect sizes expressed by Cohen's *d* and were included in the meta-analysis. When it comes to the efficacy of error correction, the mean effect size equaled 1.16, a value that is deemed very large (cf. Cooper and Hedges 1994; Mackey and Gass 2005), which led them to conclude that corrective feedback has a substantial effect on acquisition and it is on the whole durable, even allowing for the possibility that methodological problems related to reliability and validity that afflicted some studies may have exaggerated its potential. They also identified such moderating variables as the type, source, mode and focus of corrective feedback, the mode of correction, and the context in which a particular study took place. The results were inconclusive with respect to the relative value of explicit and implicit CF, no difference was found in the contribution of general (i.e. unfocused) and specific (i.e. focused) treatment, and most of the corrections were teacher-generated, with effect sizes being large. In contrast to other overviews (e.g. Nicholas et al. 2001; Spada and Lightbown 2009), Russell and Spada (2006) did not find evidence that the setting in which research is conducted (i.e. classroom vs. laboratory) impinges upon the effect size of the treatment gains, but they are at pains to point out that both here and in many other cases the lack of differences can be attributed to the small number of studies included in the analysis.

The other four research syntheses and research meta-analyses that will be reported here were undertaken, in chronological order, by Keck et al. (2006), Mackey and Goo (2007), Li (2010) and Lyster and Saito (2010), and all of them focus upon the effects of oral corrective feedback either in their entirety or in part, with the qualification that feedback of this kind can be delivered in face-to-face interactions or via the computer. The main thrust of Keck et al. s' (2006) study was to synthesize the findings of experimental studies published between 1980 and 2003 which set out to examine the link between task-based interaction and acquisition of grammatical and lexical features, and thus it is germane to the present

discussion inasmuch as it investigates the effects of opportunities for pushed output, which are inextricably connected with the provision of corrective feedback. Out of the initial batch of 100 identified studies, 14 unique sample studies were finally included in the meta-analysis, the main selection criterion being the possibility of calculating Cohen's *d* values on the basis of the data provided. Ten of those were designed in such a way that there was a requirement on the part of at least some of the participants to produce at least some of the targeted features and to modify their output in the course of the treatment. The effect sizes proved to be larger for tasks encouraging pushed output than for those that did not, and the sizable gains of the former were maintained over time, especially on immediate posttests. Commenting on this result, Keck et al. (2006, p. 122) point out that "[t]he robust *+PO* findings lend support to arguments made by Swain (1985, 2000) that opportunities for pushed output play a crucial role in the acquisition process".

Mackey and Goo's (2007) meta-analysis also dealt with empirical investigations into the contributions of interaction and it addressed some of the questions tackled by Russell and Spada (2006) and Keck et al. (2006), "(…) partially replicating, updating, and extending their research" (2007, p. 408). The study involved 27 unique sample studies gleaned from 28 research reports that were published between 1990 and 2006, and were selected in accordance with a number of criteria (e.g. an experimental or quasi-experimental design, focus on a specific grammatical or lexical feature, inclusion of one or more communication tasks as part of the treatment, the occurrence of synchronous communication). The analysis aimed to determine the overall effectiveness of interaction in promoting the acquisition of the targeted feature and to investigate the impact of a range of theoretical factors (i.e. type of the targeted form, occurrence of interactional feedback, type of feedback, focus of feedback, and opportunities for modified output) as well as contextual and methodological factors (i.e. context, setting, outcome measure). As was the case with the previous two syntheses, the selected studies were coded according to these factors and effect sizes in the form of Cohen's *d* and Cohen's *h* were calculated for each such variable.

Since the studies qualified for the investigation manifested large mean effect sizes, it was concluded that "[i]nteraction plays a strong facilitative role in the learning of lexical and grammatical target items" (2007, p. 438). Other important findings were as follows: (1) the effects of interaction were positive regardless of the target feature, but the effects sizes were significantly larger for lexis than for grammar on immediate posttests, but more durable in the case of grammatical features, (2) there was no immediate benefit of the feedback condition over the no feedback condition, but a significant difference emerged on short-term posttests to disappear again at the time of delayed posttests, (3) recasts proved to be successful in triggering language learning, (4) there was no difference between feedback narrowly focused on a set of linguistic features and correction that indiscriminately addressed a wide range of errors on immediate posttests, but the former turned out to be more effective over time, (5) interaction deprived of the opportunity for output modifications proved to be more beneficial for acquisition than interaction rich in such opportunities, both immediately and in the long term, (6) foreign

language contexts produced stronger effects for interaction than second language contexts, (7) classroom and laboratory settings generated large mean effect sizes on immediate and delayed posttest, but the gains were significantly greater in the latter, and (8) in line with the findings of Norris and Ortega's (2000, 2001) synthesis, the largest effect sizes were observed for the outcome measures relying on close-ended prompted production, but an increasing trend was observed to draw on measures of free production. All of these findings provide a basis for Mackey and Goo's (2007, p. 446) pronouncement that:

> [a]lthough feedback (including recasts) and modified output seem to be important interactional features that contribute to the beneficial effects of interaction for language learners on their acquisition of an L2, more research specifically designed to examine the effects of different feedback types and opportunities for modified output is necessary to obtain a clearer understanding of their roles in language learning.

A few studies that have been carried out since Mackey and Goo's (2007) synthesis have addressed some of the concerns raised above and their findings have been taken into account in two very recent meta-analyses of research into the effectiveness of oral corrective feedback undertaken by Li (2010) and Lyster and Saito (2010). The former was aimed to fill in the gaps in the previous research of this kind and eliminate some of its shortcomings by including unpublished doctoral dissertations, excluding studies of written correction, including variables that had not been previously dealt with, examining the provision of corrective feedback as a sole construct rather than together with other types of intervention, and following as much as possible the principle that one study could generate just one effect size. The meta-analysis took place on the basis of data retrieved from 33 primary studies that were coded according to the predetermined criteria and sought to probe into three independent variables, that is the provision of feedback, different types of feedback and the timing of posttests. Similarly to earlier research analyses, it explored a number of moderator variables, albeit at times under different labels, namely: research setting (foreign vs. second), research context (laboratory vs. classroom), task type (communicative vs. mechanical activities), delivery mode (through the computer or in face-to-face interaction), outcome measure (metalinguistic judgment, selected, constrained and free constructed response), publication type (published in a journal or having the status of a dissertation), length of treatment (short if 50 min or less, medium if falling between 60 and 120 min, and long if exceeding 120 min), as well as participants' age (interpreted as a continuous variable).

The main finding was that on the whole corrective feedback manifested a medium effect on acquisition and this effect was maintained over time, but its magnitude was smaller than in the meta-analyses mentioned previously. Another interesting result was that although explicit feedback was more effective in the short term, the long-term effects were slightly larger for implicit feedback, which, as Li (2010) speculates, might indicate that the latter is better suited to the development of implicit, or highly automatized L2 knowledge, with the caveat that a propitious constellation of mediating factors is needed for this to take place. As to the impact of these variables, the analysis revealed that foreign language contexts and artificial settings produce larger effects than second language contexts and real-classroom

settings, the findings which are accounted for in terms of more positive attitudes towards error correction on the part of learners (e.g. Loewen et al. 2009; Pawlak 2010a) and insufficient salience of recasts in naturally occurring educational discourse (Lyster 1998a; Nicholas et al. 2001). It also turned out that feedback supplied during accuracy-based activities generated larger effect sizes than correction provided in the course of fluency-oriented tasks, which was attributed to prevalence of the former in lab-based studies and the resemblance of treatment tasks to measures of learning outcomes in this condition. In contrast to the findings reported by Norris and Ortega (2000, 2001) or Mackey and Goo (2007), the effects were larger for studies which evaluated performance by means of tasks based on free constructed responses than those containing constrained responses or metalinguistic judgment tests, which Li (2010) explains in terms of the fact that while the former enable avoidance of difficult structures, the latter necessitate the use of features that learners may be uncertain about. It was also shown that treatments lasting more than 50 min generated the largest effect sizes, but interventions of such limited duration were the hallmark of laboratory research which was more effective in general, and it is obvious that this variable interacts in intricate ways with the properties of the target feature, type and intensity of feedback, individual learner differences and other factors. Last but not least, feedback provided by native speakers or delivered through the computer was more effective than teacher correction in the classroom, and it worked somewhat better in the case of learning English than learning French or Spanish, while no significant effects were identified for age, mode of delivery and publication year. Given the complex and multifaceted picture that emerges for the meta-analysis, it is perhaps not surprising that Li (2010) should call for even more research in the area of corrective feedback that should focus, among others, on child learners, languages other than English, higher proficiency and the use of computers, and examine such moderator variables as age, gender, the complexity of the target feature, L1 transfer, culture or interlocutor type. As he comments at the close of his paper, "(…) now that the effect of corrective feedback has been established, researchers should embark on the mission of investigating the factors constraining its effectiveness" (Li 2010, p. 349).

Lyster and Saito (2010), in turn, embrace a more pedagogically oriented perspective in that, apart from pursuing the theoretical and empirical agenda, they are interested in appraising the educational value of corrective feedback and offering concrete guidelines for instruction. In effect, their meta-analysis is based on the assumption that only classroom-based research should be taken under consideration and it is thus restricted to 15 quasi-experimental studies involving 827 learners, which were located through electronic databases listing publications from leading journals. Similarly to other meta-analyses, it consisted in calculating Cohen's *d* index and coding the studies in relation to the variables specified in the research questions. Those questions were related to the efficacy of oral correction in fostering classroom language development and the potential impact in this area of such factors as: types of CF (i.e. recasts, explicit correction and prompts), types and timing of outcome measures (free constructed-response, constrained constructed-response, selected response and metalinguistic judgment formats, immediate vs. delayed—1 week vs.

2–6 weeks), instructional setting (second vs. foreign), treatment length (brief—less than 1 h, short—1–2 h, medium—3–6 h, and long—more than 7 h), and learners' age (children—10–12 years of age, young adults—17–20 years of age, and adult learners—above 23 years of age).

While some findings mirror those of the meta-analyses by Russell and Spada (2006), Mackey and Goo (2007), and Li (2010), others contradict previous observations, which is in all likelihood the corollary of the exclusive focus on pedagogic interventions implemented in the classroom. In the first place, as was the case with the three studies just mentioned, it was apparent that "(…) irrespective of instructional settings, CF is facilitative of L2 development and that its impact is sustained at least until delayed posttests" (Lyster and Saito 2010, p. 294), with the effect sizes ranging from medium to large. Secondly, all feedback types yielded significant effects, but prompts turned out to be more effective than recasts and the effects of explicit correction were indistinguishable from those of the other two corrective moves. This result is in line with Li's (2010) finding that recasting works better in the laboratory and testifies to the fact that, in the words of Lyster and Saito (2010, p. 290), "CF in classroom settings may be more effective when its delivery is more pedagogically oriented (i.e. prompts) than conversationally oriented (i.e. recasts)". As regards the other moderator variables, free constructed-response measures produced larger effects for CF than the remaining three types of measures, a result that is attributable to the operation of transfer-appropriate processing (Lightbown 2008; see discussion of Skill-Learning Theory in Sect. 2.4.1.5), younger learners were shown to benefit from negative feedback significantly more than older learners, with CF being hypothesized to engage implicit learning mechanisms (cf. Mackey and Oliver 2002), and the impact of the length of treatment did not yield itself to easy interpretations because longer treatments turned out to be more effective than short-to-medium interventions, but not brief ones. The recommendations for future research projects that Lyster and Saito (2010) put forward concur to a large extent with the guidelines advanced by Li (2010), as they stress the need to pay more attention to the benefits of recasts and prompts, to gauge the components of corrective moves which underlie their effectiveness, and to gain more insights into the impact of learner characteristics. The results of this and the other reviews and research meta-analyses discussed in this section clearly indicate then that although there is substantial empirical evidence for the positive effects of error correction, the extent to which it spurs language acquisition hinges upon a multitude of variables which are manifested in the pedagogical choices made by practitioners, some of which will be touched upon in the following chapters.

2.4.2.5 Learners' and Teachers' Beliefs

The present discussion would be incomplete without taking a look at the outcomes of research projects that have tapped learners' and teachers' beliefs about the utility of feedback for the simple reason that although such perceptions are

subjective and thus they do not describe in and of themselves the true efficacy of instructional options, their significance lies in the fact that they might impact upon students' behaviors (cf. Grotjahn 1991; Dörnyei 2005) and affect teaching practices (cf. Burgess and Etherington 2002; Borg 2003, 2006). This influence also holds for the provision of oral and written corrective feedback because, for example, positive or negative attitudes in this area may determine whether and how it is employed by teachers and whether students display the requisite level of engagement by attending to it or making an attempt to modify their output (cf. Ellis 2010b). In fact, these beliefs may play a decisive part in shaping the effectiveness of different feedback types, as it is obvious that if learners show a proclivity towards explicit correction, they may ignore implicit recasts, either deliberately or unwittingly, since they will fail to discern the teacher's informative intention, thus treating the negative evidence as irrelevant (see the discussion of Relevance Theory above).

Also, here it is justified to start the overview of relevant research with a brief inspection of studies that have aimed to explore learners' and teachers' beliefs about broadly defined form-focused instruction and sometimes to compare them, all the more so that the data collection tools used for this purpose typically contain items dealing with different aspects of error correction. Although a thorough discussion of this line of inquiry is beyond the scope of the present work, even a cursory look at the available empirical evidence demonstrates that both learners and teachers assume that formal instruction including error correction is necessary and they are convinced of its value, with the former often manifesting much more positive beliefs in this respect than the latter. As regards learners, such findings have been reported by Schulz (1996, 2001), Peacock (2001), Brown (2009), Loewen et al. (2009) or Pawlak (2011b) for different nationalities, educational settings and foreign languages.[18] Empirical evidence of this kind is even more abundant in the case of practitioners, both in-service teachers and teacher trainees, as evidenced in research projects conducted by, among others, Schulz (1996, 2001), Burgess and Etherington (2002), Pawlak (2006b), Pawlak and Droździał-Szelest (2007), Borg and Burns (2008), and Wach (2011).[19] Even when discrepancies in the perceptions of the two groups were detected, as is the case with the studies carried out by Schulz (1996, 2001), for instance, or as has been thoroughly documented in the works by Borg (2003, 2006), they were typically a matter of degree rather than extreme divergence. An exception to this general tendency is the research project undertaken by Pawlak (2013b), who not only found that learners were on the

[18] It should be noted that some of these studies identified slight divergences in the beliefs manifested by students representing different nationalities, instructional contexts, or target languages (e.g. Schulz 2001; Loewen et al. 2009; Pawlak 2011b). Such differences are not highlighted and elaborated upon, however, as they are not directly relevant to the present discussion.

[19] Most of the studies mentioned here investigated different facets of form-focused instruction and it is obvious that the participants' attitudes and beliefs were more or less positive depending on the area. In all of them, however, there was a clear preference for some kind of pedagogic intervention, which is of primary significance from the point of view of the present deliberations.

whole more convinced of the contributions of different types of FFI than teachers, but also managed to pinpoint divergences in specific areas (i.e. the design of FFI lessons, introducing and practicing grammar structures, correcting grammar errors).

A similar conclusion can be reached with respect to empirical investigations that have squarely focused on the provision of different forms of oral and written corrective feedback. In two early studies devoted to this issue, for example, Cathcart and Olsen (1976) found that learners express a preference for more frequent correction than is usually the case during their language lessons, whereas Chenoweth et al. (1983) reported that their subjects wanted to have their erroneous utterances treated not only in the course of form-focused activities, but also in communicative exchanges. It should be noted, however, that the former study also showed that learners' perceptions may undergo a major change when a stricter policy towards errors is in fact implemented and the nature of classroom interaction becomes so controlled and rigid that it ceases to be acceptable. More recent research has by and large corroborated such early findings but has also managed to identify learners' preferences with respect to specific aspects of corrective feedback, although such trends will only be signaled here owing to the fact that the pertinent studies will be invoked when discussing the effectiveness of different types of correction in the following chapters. Suffice it to say at this point that that Nagata (1993) and Kim and Mathes (2001) found a marked preference for explicit correction among the learners whose beliefs they explored, a finding that was confirmed by Griffiths and Chunhong (2008), who additionally reported that learners are in favor of instantaneous correction supplied by the teacher as well as demonstrating that there exists a positive, statistically significant correlation between the preference for immediate error treatment and end-of-semester grades. Similarly to research into perceptions of form-focused instruction in its entirely described briefly above, also here some differences between learners' and teachers' views can be detected (e.g. Nunan 1988; Yoshida 2010), but, again, such discrepancies are not dramatic and they pertain more to specific choices teachers have at their disposal rather than the value of error treatment as such.

It is also warranted to include in the present discussion the findings of a few selected studies that have looked more specifically at the beliefs concerning the provision of corrective feedback in response to spoken and written inaccuracies separately. When it comes to oral error correction, one such research project was carried out by Pawlak (2010a), who examined learners' perceptions of the importance of feedback in the course of fluency-oriented tasks and accuracy-based activities, focusing in particular on its source, type and timing, as well as the relationship between preferences in these areas and proficiency, operationalized as end-of-semester grades in English. The findings mirrored to a large extent those of the other research projects mentioned in this section since the participants were very positively predisposed to error correction in general, but they were more convinced of the need for negative feedback in controlled exercises than in communication-based tasks. They favored in particular direct (i.e. explicit) feedback provided by the teacher and although they were much less enthusiastic

about immediate, public error treatment or the prospect of self-correction, even in these areas their perceptions were on the positive side, only approximating neutrality in the case of peer correction. These results found reflection in the students' responses to open-ended queries, and significant positive correlations were revealed between attainment and overall importance of correction, the provision of CF during fluency-oriented activities and teacher correction.

Several interesting studies of oral feedback have also been conducted by Yoshida (2008, 2009, 2010), who is particularly interested in the differences between teachers' and learners' perceptions of corrective moves, but investigates them in a more dynamic and situated manner as they are manifested in classroom discourse. In her recent research project, she found that learners' reactions to feedback were sometimes indicative of the failure to notice the corrective information while teachers displayed a tendency to overestimate the levels of noticing and understanding of feedback on the part of more advanced students, but at the same time to withhold further reactive negative evidence from learners that they perceived as less capable..[20] As Yoshida notes, "[i]n both cases, the result was that further negotiation, which might have elicited learners' noticing and understanding of correct forms, did not occur" (2010, p. 311). Even though these findings testify to the need to reconcile learners' and teachers' perceptions of corrective feedback to enhance its effectiveness, they are based on the assumption that correction is instrumental in promoting second language development and it is clear that this conviction is shared by the participants of the study.

Moving on to written corrective feedback, Hyland and Hyland (2006, p. 84) point out in their state-of the-art paper that "[r]esearch on student preferences has consistently found that students expect teachers to comment on their written errors and are frustrated if this does not happen". This is evident, for instance, in the studies conducted by Leki (1991), which showed that most students display a strong preference for teacher correction, and Hedgcock and Lefkowitz (1991), who identified similar beliefs among learners of English as both a foreign and second language, an additional finding being that the former preferred to be corrected on grammar, learning and mechanics of writing while the latter favored feedback on content and organization. Also of interest are two studies conducted by Lee, one of which (Lee 2004) showed that teachers and students in Hong Kong manifest a predilection for comprehensive written error correction, and the other (Lee 2008) zoomed in on practitioners only, confirming earlier findings and showing that they mainly focus on grammatical errors, and are influenced in their choices by a myriad of contextual factors (beliefs, knowledge, institutional policies, etc.). The final research project to be mentioned here was conducted by Montgomery and Baker (2007), who found that there was much overlap between the way

[20] Although this study is unequivocally related to perceptions and beliefs about correction, which is the reason why it is mentioned here, it also provides insights into learner engagement and thus it will be referred to as well in the overview of research on oral CF that will be presented in Chap. 4.

learners of English of different nationalities perceived the feedback they received from teachers and those teachers' self-assessments of how they conducted error treatment.[21] Even though the reported practices of the teachers deviated to some extent from what they actually did in that they in fact mainly concentrated on local errors (e.g. grammar) rather than global errors (e.g. organization), their learners were content with this focus of correction. Both this and other studies of learners' and teachers' perceptions of error correction dealt with above then illustrate extremely favorable views on the need for and value of feedback. Although these perceptions might vary to some extent as a function of the type of feedback and there may be some divergences between the beliefs held by the two groups, on the whole, they are nonetheless overwhelmingly positive.

2.4.3 Pedagogical Considerations

Compelling as they might be, the theoretical and empirical arguments for corrective feedback are perhaps not of immediate relevance for practitioners who are in the vast majority of cases unfamiliar with the latest theoretical positions or research findings, but who have to face the exigencies and constraints of classroom instruction on a daily basis. Most of them, especially those working in foreign language contexts, would in fact be in for quite a surprise were they to read Truscott's (1996, 1999) elaborate and vociferous critiques of oral and written error correction for the reason that they take it for granted and feel that it is their responsibility to respond to inaccuracies in their students' output. They would also in all likelihood concur with Larsen-Freeman (2003, p. 127), who points out that "[p]roviding feedback is an essential function of teaching", and adds a little later down the page that "[t]eaching is not a mere reflex of language acquisition. Our job as teachers is to accelerate, not to emulate, the natural language acquisition process". In fact, it is possible to come up with as convincing a rationale for the provision of negative feedback on pedagogical grounds as Krashen (1981, 1982) and Truscott (1996, 1999) do for its abandonment, and while these two scholars are likely to remain adamant in their claims, such argumentation will be more persuasive than the justifications offered by the detractors of correction. Following the solution adopted in the preceding sections, these pedagogical considerations will first be briefly discussed with respect to formal instruction in general and later the focus will be narrowed down to oral and written error correction, with the caveat that no attempt will be made to distinguish between the two.

A thoroughgoing discussion of the pedagogic arguments that can be invoked in support of form-focused instruction, of which, it should be reminded, negative feedback is an inherent part, is presented by Pawlak (2006a), who frames it

[21] This study will also be invoked in Chap. 4 when discussing learners' engagement with written corrective feedback.

in terms of the glaring shortcomings of the purely communicative approaches. For one thing, even if teachers wholeheartedly wanted to replicate in their classrooms the interactional patterns of naturalistic discourse, thus turning them into what Ellis (1992) refers to acquisition-rich environments, their efforts are bound to be futile or at best fall far short of their expectations. This is because, due to, among others, the scant number of classes, restricted out-of class exposure, lacking teachers' communicative competence, educational traditions, examination requirements and prevalent expectations, interaction in the foreign language classroom is bound to be characterized by a low quantity and quality of target language input, common reliance on the first language and very limited opportunities for communicative output, and, as research into immersion programs has aptly demonstrated (cf. Swain 1985; Tarone and Swain 1995), these weaknesses are by no means the bane of one instructional context. Moreover, as the present author found in a descriptive study that aimed to compare facets of classroom discourse in lessons conducted by Polish and American teachers, "(…) replicating the characteristics of general conversation in the foreign language classroom does not necessarily promote language development, and, in some cases, can even hinder rather than foster that process" (Pawlak 2004b, p. 103). In light of such realities, it would be imprudent to deprive learners of teaching strategies that can enhance acquisition, with different options in form-focused instruction clearly representing potentially beneficial classroom practices.

Another argument rests on an assumption that language instruction should take heed of learner characteristics, needs, and preferences, which is one of the main planks of learner-centeredness, a concept so ardently subscribed to by the proponents of non-intervention. If this recommendation is to be taken seriously, there should surely be a place for drawing learners' attention to formal aspects of language in a variety of ways since, as was shown above, they express a strong wish to be corrected, and many of them are likely to benefit from such pedagogical intervention on account of their cognitive, affective and social profiles. It should also be noted that FFI based to some extent on a structural syllabus ensures comprehensive and systematic coverage of target language forms learners might need (Ellis 2002c), high levels of accuracy may be at a premium in some circumstances, and awareness of language structure sometimes ensures greater precision of expression (Swan 2002). Lastly, there are many educational contexts, including the Polish one, where the strong version of the communicative approach has not made significant inroads, mainly because the educational traditions, curricular requirements, deeply ingrained beliefs and, crucially, scant access to the TL all dictate that language forms be taught and errors corrected (Fotos 1998, 2005).

Shifting the focus more specifically to error correction, it is enlightening to begin with a quote from Allwright and Bailey (1991, p. 99), who write that: "[i]f one of our goals as language teachers is to help our learners move along the interlanguage continuum, getting closer and closer to the target language norm, then, the thinking goes, we must provide them with the feedback they need to modify their hypotheses about the functions and linguistic forms they use". Indeed, a question immediately comes to mind how learners are supposed to determine

whether what they are saying or writing is correct or not, or whether their utterances convey their intended meanings with sufficient precision if they should be left to their own devices. After all, they can only consult a dictionary or a grammar book if they realize themselves that there is a problem with the use of a grammar structure, the choice of a particular word, or its pronunciation, which is in most situations not the case, and, when exposure is scarce, they are not likely to find confirming or disconfirming evidence in the available, often impoverished, input. Without correction then, students may keep producing inaccurate forms over a long time being convinced that the rules they are operating with are accurate, which might from the psycholinguistic perspective impede the processes of proceduralization and automatization, and, from the sociocultural perspective, hamper the onset of internalization and self-regulation (see Sect. 2.4.1). Even worse, as Schachter (1988) suggested, such erroneous output may serve as input both to the speaker or writer and to the listener or reader, which may be responsible for retention or formulation of incorrect hypotheses, thus putting a brake on the development of explicit and implicit knowledge. All of this clearly indicates that corrective feedback should be regarded as an ally rather than an enemy of second language acquisition in the classroom and it should thus be an integral part of instruction, on the obvious condition that it is provided in the right way, a point that will be considered later in this book. In other words, error correction is one of the main responsibilities of the language teacher who cannot just abdicate it in pursuit of teaching more naturally, as this will inevitably have a detrimental effect on the learning process. Besides, as was made plain in Sect. 1.3, error correction is so deeply ingrained in language education and so much a fact of life for teachers and learners, that the prospect of abandoning it altogether is neither realistic nor feasible.

To conclude the discussion of the pedagogical considerations providing support for the role of corrective feedback, it is also worthwhile to respond briefly to some of the criticisms raised by Truscott (1996, 1999) that were presented in Sect. 2.3. In the first place, whether or not learners notice, respond to and understand the corrective move depends to a large extent on how this moves is realized, what happens before and after the pedagogic intervention, as well as learners' characteristics, expectations and goals. The same factors will determine to a large extent the degree of retention of the negative evidence, although this is a slippery concept given the claims of the Delayed-Effect Hypothesis that noticing, priming and narrowing hypothesis space may be as important. When it comes to the lack of consistency and systematicity of CF, it has indeed been attested in a number of studies (e.g. Long 1977; Nystrom 1983), but it is somewhat misguided to unequivocally stigmatize it as a liability and a sign of inefficacy. Quite on the contrary, inconsistency might be as beneficial and desirable as it is inevitable given the fact that it may be interpreted as a sign that the teacher is trying to cater to individual learner needs (cf. Allwright 1975), and, aside from this, there is no reason to believe that the input provided during language lessons should be more consistent and less random than negative feedback (cf. Lyster et al. 1999). Counterarguments can also be provided in response to affective concerns as it is clear to anyone involved in

the business of language teaching that correction does not have to be inherently embarrassing because most learners expect and require it anyway, and teachers can adjust it drawing upon their knowledge of learners' personality and preferences. What is more, there is no reason why students should lack the motivation to attend to oral correction, to engage in negotiation of form or to revise their written errors when they actually express an explicit wish to receive feedback and when they are sensitized to the principles according to which it is supplied. Lastly, as Lyster et al. (1999) emphasize, there is no reason to believe that learners benefit only from negative evidence that is matched to their developmental stage and there is copious evidence that CF can be successfully integrated in communicative activities. On this last point, the main premise of this book is that error correction may be particularly facilitative of the development of implicit knowledge when it occurs in the course of meaning and message conveyance, which is a logical and reasonable assumption in light of the copious empirical evidence.

All of this is not to say of course that many of the reservations brought up by Truscott (1996, 1999) are not valid in situations when feedback is provided in indiscriminate, erratic, haphazard and uninformed ways. Still, the danger that an instructional option may not work as well as it should and it may not be effective under some circumstances surely does not provide a basis for rejecting it out of hand as useless and even harmless. Rather, it falls upon theoreticians, researchers and methodologists to furnish practitioners with a set clear of guidelines which would help them become cognizant of the potential pitfalls, try to avoid them and maximize the value of the feedback they provide. This is certainly the rationale underlying the present volume, which views theoretical positions and research findings as an important foundation for pedagogical implications and concrete proposals for everyday classroom practice.

2.5 Conclusion

The main aim of the present chapter was to present contrasting opinions on the place of oral and written corrective feedback in the foreign language classroom and, on the basis of their careful consideration, to provide a convincing rationale for the facilitative contributions of the treatment of learner errors. First, the conditions that have to be met for successful language acquisition were outlined which include the provision of positive evidence, negative evidence and abundant opportunities for output production, with the last two implicating the necessity of correction. The subsequent section was devoted to the discussion of the key arguments against error correction which have been advanced on theoretical, empirical as well as purely practical grounds. The most extensive and at the same time the most crucial part of the chapter, however, dealt with the justifications for the provision of CF on inaccurate forms in learners' spoken and written output, both such that are tied to generally conceived FFI, of which error correction is an integral part, and such that are specifically related to corrective reactions to learners'

errors. In this case, the arguments were also outlined with reference to leading theories and hypothesis in the domain of SLA which envisage an important role for error treatment, the research findings speaking to the effectiveness of this instructional option and testifying to the positive perceptions thereof on the part of teachers and learners, as well as more pedagogically orientated considerations. It should also be noted that since the chapter addressed the overall contributions of corrective feedback, no attempt was made to maintain the distinction between oral and written correction at all times, the discussion of the empirical evidence mainly focused upon the latest state-of-the-art papers as well as research syntheses and meta-analyses, with the consequence that the impact of specific feedback types and other moderator variables was merely signaled, and the choices teachers have at their disposal were not described in any systematic ways.

The conclusion that can be reached on the basis of these deliberations is that, thanks to its capacity to simultaneously serve as positive and negative evidence and to generate output, corrective feedback, whether it occurs in the oral or written mode, fosters second language development and there are good reasons to utilize it in the course of both controlled exercises and communication-based tasks. What is of particular importance, such support derives from both psycholinguistic and sociocultural accounts of second language acquisition, since error correction is hypothesized to activate the microprocesses of attention, cognitive comparison and noticing the gap, to assist the transformation of declarative knowledge into automatized procedural knowledge, to act as a priming device, to augment the relevance of input, to ensure instructional counterbalance as well as to promote internalization and the move to the stage of self-regulation through stimulating social interaction in the zone of proximal development. Of pivotal importance is the fact that such theoretical claims have been by and large substantiated by research findings which have unequivocally demonstrated that not only does CF work and its effects are durable, but also that it contributes to the development of both explicit and implicit knowledge. Moreover, even in the case of studies that do not rely on a pretest–posttest design, but focus on immediate uptake and repair or successful reformulation of the same text, it would be imprudent to claim that the lack of evidence that correction has a beneficial effect over time automatically means that it cannot happen. In fact, even a failure to modify one's output does not constitute proof of the inefficacy of CF, on account of the fact that, as posited by the Delayed-Effect Hypothesis, progress may manifest itself at a later time. Equally significant is the empirical evidence showing that learners tend to express a strong preference for correction and, despite some divergences, these sentiments are largely shared by teachers. Finally, it has been clearly shown that error correction is not only pedagogically viable, it does not have to impede the flow of communication and put learners on the defensive, but also that it is the responsibility of the teacher to provide it, it may prevent the formulation of erroneous hypotheses and it may indeed be indispensable in some instructional settings.

On the other hand, however, it should be emphasized that the beneficial effects of error correction should by no means be taken for granted because its indiscriminate, random and unpremeditated occurrence may not only turn out to be of

little value, but, in some cases, it may also confuse and embarrass the learners, thus confirming the reservations expressed by Krashen (1982) and Truscott (1996, 1999). In other words, it is not being suggested here that all errors should on principle be immediately corrected with little consideration given to such issues as the overall instructional agenda of a given lesson, the activity being performed, the properties of the linguistic feature that has been applied incorrectly, learner characteristics or contextual circumstances. This is because, as is abundantly evident from the foregoing discussion of the theoretical positions and empirical evidence, and specifically the insights gained from the latest research syntheses and meta-analyses, the provision of CF is an exceedingly complex task that has to take into account a wide array of variables related not only to the nature of the corrective move *per se* but also the type of error being treated, the psycholinguistic readiness to acquire a specific form, the task in hand, the objectives of the lesson, the instructional setting, and individual variation which manifests itself in such factors as age, level of proficiency, aptitude, learning styles, motivation, anxiety levels or learning goals, to name just a few. In other words, corrective feedback that proves to work splendidly for a particular learner working on a particular task in a particular situation may fail dismally for another under a different set of circumstances. All of this demonstrates that it is necessary to take a closer look at the choices that teachers have at their disposal when embarking on the treatment of learner errors and the factors that shape the effectiveness of such treatment. These will be the leading themes of the two remaining chapters of the present work.

Chapter 3
Pedagogical Choices in Error Correction

3.1 Introduction

As was made clear in the conclusion to the preceding chapter, it would obviously be a gross oversimplification to assume that the provision of corrective feedback invariably brings about only positive effects regardless of the circumstances in which it transpires. In fact, the extent to which it contributes to interlanguage development depends on a wide range of factors, most of which are intricately intertwined with the decisions that teachers are required to make on a regular basis in the classroom. On the most general level, a question could be asked whether error treatment is premeditated and constitutes part of a broader instructional agenda, as is the case, for example, when it is closely coordinated with the presentation and practice of specific language forms, or whether it occurs in a rather random way focusing on the inaccuracies that happen to catch the teacher's attention at a particular moment. Another important issue has to do with the nature of the instructional activity in which reactive negative evidence is supplied, for the reason that its impact on the development of linguistic knowledge is bound to differ dramatically as a function of whether teachers indicate or immediately put right inaccurate forms in a piece of writing, they respond to incorrect output in controlled text-manipulation activities, or they choose to intervene in one way or another when they are confronted with an ill-formed utterance during a communication-based task.

In each of those situations, there are a number of other choices that can be made, related in particular to the issues raised well over three decades ago by Hendrickson (1978), namely whether, when, which errors and how to correct, as well as who should be responsible for the treatment. All of these issues, in turn, present the teacher with a number of options that he or she can exploit to adjust the corrective feedback to a particular learner, a particular situation and a particular set of instructional goals. What should be emphasized, however, is the fact that various contexts place very different constraints and demands on the practitioner,

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with the decision-making process greatly increasing in complexity together with the open-endedness, spontaneity and unpredictability of the activity in hand. This is because, while there is ample time to devise and implement a certain correction strategy in the case of written errors, things become incomparably more complicated and difficult when a lesson is in progress, still quite manageable perhaps when students are reading out sentences in a highly controlled exercise, but surely much more intricate when learners are conveying genuine meanings and messages in real time, as may be the case in a whole-class discussion. In the latter case, decisions have to be made in a split second, with the consequence that, despite all the knowledge, training and skills that teachers have at their disposal or the best of intentions, even the most dedicated of them may be in a quandary as to how to provide treatment that would be most appropriate and useful. Yet another set of challenges awaits practitioners who elect to fall back on information and computer technology since although many of the decisions are similar to those mentioned above, computer-mediated communication, be it synchronous or asynchronous, adds a new dimension to the provision of corrective feedback.

The aim of the present chapter is to carefully examine the repertoire of choices available to teachers as they provide feedback on errors in learners' spoken and written output, which, on the one hand, testifies to the pedagogical orientation of the present work and, on the other, lays the groundwork for the discussion of the findings of research into the effectiveness of correction in Chap. 4. At the very outset, the potential contributions of oral and written corrective feedback will be considered with regard to the development of explicit and implicit second language knowledge, taking into account the specific circumstances under which such negative feedback is provided, that is a focus on the target language code and on meaningful communication. This will be followed by a brief comparison of the key issues involved in oral and written error correction, as well as the consideration of the influence that the differences between these two modes can have on language development. Subsequently, emphasis will be shifted to the main theme of the chapter, that is the options that teachers can avail themselves of when responding to learners' errors. These will first be tackled in terms of syllabus design and lesson planning, and then with reference to the questions posed by Hendrickson (1978), or the whether, when, what, how and who of correction, with the caveat that it is the types of corrective feedback that will receive the most attention since most of the literature focuses on this area. It should also be added that, in order to avoid unnecessary repetition, these questions will be dealt with jointly for oral and written correction, although, in some cases, the two will be kept apart within a subsection for the sake of clarity. Finally, a separate section will be devoted to computer-mediated feedback which is very likely to grow in popularity in the near future and which has already been incorporated into a number of empirical investigations. Even though most of the pedagogic choices here will be identical to those involved in oral and written correction, other decisions will also have to be made and the sheer application of computer environments as well as their specificity dictate that the potential of error correction will be enhanced in some ways and limited in others.

3.2 Error Correction and the Development of Second Language Knowledge

Before embarking on the discussion of pedagogical choices in oral and written correction, it is warranted to ponder over the potential effects that such instructional options are likely to have on the acquisition of the linguistic features that are the focus of the intervention. To be more precise, these effects will be considered here with regard to the development of learners' explicit and implicit knowledge, or their conscious awareness of relevant rules, patterns and fragments, and the ability to deploy them in spontaneous communication under real operating conditions, respectively.

Several crucial points have to be clarified at this juncture, however. First, although the author is fully aware that the concepts of explicit and implicit knowledge and declarative and procedural knowledge do not exactly overlap (DeKeyser 2010; see Sect. 1.5 in Chap. 1 for a discussion of this issue), such differences will be ignored as they are not relevant to the present discussion. Second, it is assumed here that form-focused instruction, including the treatment of learner errors, fosters the development of both explicit and implicit knowledge, or, to be more specific, that an interface between the two types of representation is possible to some extent. As to the scope of this interface, it may be strong in the case of features that are not constrained by developmental sequences and the ability to perform the requisite syntactic operations (Pienemann 2007), or weak for forms for which these restrictions apply, although, again, these theoretical disputations are not directly pertinent to this exposition, all the more so that they are yet to be resolved by SLA specialists (cf. Ellis 1997, 2006b; Pawlak 2006a). Third, irrespective of the issue of possible conversion of one kind of knowledge into the other, or the development of a parallel implicit representation, as some neurolinguists would have it (Paradis 2004, 2009), it is recognized that pedagogic intervention of the appropriate kind can lead to the automatization of both explicit and implicit knowledge, a claim which is to some extent in line with the tenets of Skill-Learning Theory (DeKeyser 1998, 2001, 2007a, b, c). Fourth, although the terms *explicit* and *implicit knowledge* will be used throughout the discussion, no claims are made as to the exact nature of the latter type of representation other than that it can be employed effortlessly and rapidly in real-time performance. In other words, it is recognized that it can be entirely subconscious and tacit, an interpretation which is consistent with Ellis' (2005b, 2009a) stance, but also that it can in fact coincide with and be functionally indistinguishable from highly automatized explicit knowledge (DeKeyser 2003; DeKeyser and Juffs 2005). Such a position appears to be reasonable in light of the fact that, whatever the theoretical assumptions about explicit and implicit knowledge, they are bound to coexist in the mind of a learner and their respective roles in spontaneous communication may be difficult, if not impossible, to tease apart. Finally, the benefits discussed here refer to a situation in which errors are corrected immediately and the intervention is not delayed until later in the lesson or even the following class.

In order to consider the contributions of oral corrective feedback, a crucial distinction has to be drawn between *accuracy-based activities* and *fluency-oriented tasks*, which has been referred to on many occasions in the preceding chapter, albeit different labels could have been employed.[1] Pretty straightforward definitions of the two notions are provided by Bartram and Walton (1991), who use the terms *accuracy work* and *fluency work*, respectively, and describe the former as "(…) that part of the lesson where students are encouraged to make their utterances as near to a native-speaker's as possible", and the latter as "(…) that part of the lesson where students work on their capacity to communicate within the language" (1991, p. 32). In other words, accuracy-based activities are conceived as a way of encouraging learners to practice a particular language area, such as a grammar structure for which the relevant rules have been provided or discovered by students, in highly controlled exercises, in which there is ample time to think about form, meaning and use (Larsen-Freeman 2003). Such exercises are referred to as *text-manipulation activities* (Ellis 1997, see Sect. 1.6.2 in Chap. 1), they are usually included in the second stage of the presentation–practice–production procedure, and they involve the employment of mechanical, meaningful and communicative drills (cf. Paulston and Bruder 1975), as well as a wide variety of exercises based on multiple-choice, completion, transformation, paraphrase and translation. By contrast, the rationale behind the use of fluency-oriented tasks is to provide learners with opportunities to engage in message conveyance, which can be aimed at enabling them to gain greater control of and automatize the knowledge of preselected features, or simply to participate in unfettered communication in the TL without any clear focus on a specific aspect of the code. This can be achieved through the application of *text-creation activities* and *communication-based tasks*. As explained in Sect. 1.6.2 in Chap. 1, the former are typically employed in the last stage of the PPP procedure and they require learners to create their own sentences or utterances with the help of structures that have already been presented and practiced in text-manipulation activities, with the effect that the instructional focus is evident. These activities can take on a variety of forms, such as, for instance, role plays, dialogues, simulations, speeches, presentations, spot-the-difference activities or picture description tasks, or even games, to name but a few. The latter, in turn, can be divided into *unfocused* and *focused communication tasks*.

As Ellis (2003, p. 16) explains, "[u]nfocused tasks (…) predispose learners to choose from a range of forms but they are not designed with the use of a specific

[1] It should be noted that Seedhouse (2004) makes a three way distinction between repair in *form-and-accuracy contexts* (i.e. the pedagogical focus is to get learners to produce specific forms which can be assessed), *meaning-and-fluency contexts* (i.e. the pedagogical aim is to maximize opportunities for interaction) and *task-oriented contexts* (i.e. the teacher allocates tasks to learners but later withdraws and does not actively participate in the interaction). The position adopted in the present work is that the last two categories can be combined because in both cases the primary goal is to foster meaning and message conveyance. Such a stance is also justified in view of the fact that in order to discuss correction, an assumption has to be made about the presence of the teacher who can react in some way to what is being said, whether the task is being performed by the whole class or in groups.

form in mind. In contrast, focused tasks aim to induce learners to process, receptively or productively, some particular linguistic feature, for example, a grammatical structure". An example of an unfocused task could be a whole-class discussion on a given topic, a decision-making task, a communicative game or an unplanned exchange between the teacher and the students that bears resemblance to real-life conversation, or transformation, as van Lier (1996) labels it, whereas an example of a focused task could be an information-gap activity about famous landmarks which can only be completed if students accurately use or understand utterances including passive voice. What this means in practice is that in focused tasks learner attention is drawn to a preselected feature through task design (i.e. the need to employ it in order to perform the task or making it the content of the task itself) and/or methodology (i.e. the way they are implemented, with the use of corrective feedback to react to errors involving the use of the target form). In contrast, in unfocused tasks no attempt is made to single out one specific item for intervention, either *a priori or a posteriori*, although the teacher may obviously choose to encourage learners to attend to a range of linguistic features, through preemptive (i.e. before an error is committed) or reactive (i.e. the use of corrective feedback) focus on form.

Ellis (2003) emphasizes that in both cases there is a need to respect in full the definitional criteria of a communicative task, the main of which is the use of language in order to attain a non-linguistic outcome, with the effect that task instructions cannot require learners to employ a specific target language form and they should be kept in the dark as to its real pedagogic goals.[2] What should be stressed, however, is that this requirement is very difficult to meet or perhaps entirely unrealistic in some situations in foreign language contexts, where the use of the structural syllabus is the norm, coursebooks are organized around grammar structures, and students are usually fully aware of the reasons underlying the use of a specific activity. As a consequence, whether or not the targeted feature is specified in the rubric of the task, learners are more often than not likely to guess anyway why they have been requested to perform it and what language form they are expected to use, which means that the distinction between text-creation activities and focused communication tasks becomes difficult to maintain during a naturally occurring lesson. Yet another caveat is that the differentiation between accuracy-based activities and fluency-oriented tasks should be regarded as a convenient metaphor rather than something that has a tangible reality and can always be unambiguously captured. This is because language classes are by nature dynamic and fluid, and what is meant as a code-focused activity might all of sudden be transformed into a genuine exchange of ideas, whereas a communication task can be abandoned when the teacher sees it fit to deliver a mini-lecture on a TL feature that is often used incorrectly.

[2] On the basis of an extensive literature review, Ellis (2003, p. 9) identifies a number of criterial features of a communicative task. These are as follows: (1) a task constitutes a workplan, (2) a task involves a primary focus on meaning, (3) a task entails real-life processes of language use, (4) a task can involve the use of any of the four language skills, (5) a task requires learners to engage cognitive processes, and (6) a task has a clearly defined communicative outcome.

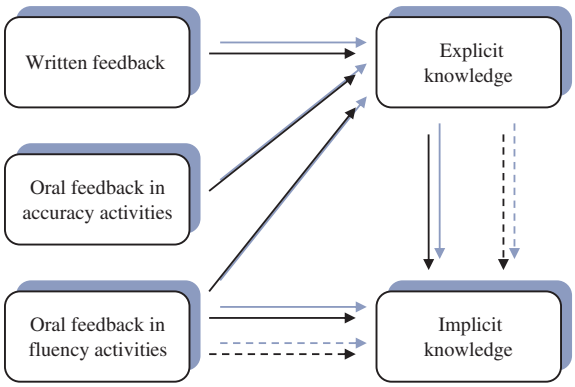

Fig. 3.1 Potential contributions of corrective feedback to explicit and implicit knowledge

As can be seen from Fig. 3.1, when the treatment of learners' oral errors takes place in the course of accuracy-based activities, its effects are limited in the sense that the corrective information, irrespective of the form in which it is supplied, mainly contributes to the growth of explicit knowledge. More specifically, it allows learners to better grasp the requisite rules, apply them more rapidly, accurately and consistently in controlled exercises and on traditional tests, and, in line with the premises of Skill-Learning Theory (DeKeyser 1998, 2001, 2007a, b), proceduralize initial declarative representation.[3] Whether such explicit knowledge can later convert into implicit knowledge by dint of practice, be automatized to the extent that it can be deployed in real operating conditions, or just have a priming effect for future language development when the learner is psycholinguistically ready to acquire a specific feature is not the concern of the present discussion, but the possibility of the existence of a strong and weak interface is marked by means of solid and broken lines in the arrows in Fig. 3.1.

Things are far more complex when negative feedback is supplied in fluency-oriented tasks as learners are struggling to get their intended meanings across, and much depends here on the way in which the correction is handled by the teacher. One possibility is that he or she will elect to suspend meaning-focused interaction in order to remind learners of the relevant rules, perhaps because the error is so egregious, it involves a structure that has recently been taught, or the use of this structure is at the heart of a text-creation activity or a productive focused communication task. In this case, the ensuing explanations and examples will in all likelihood feed into the explicit knowledge store, with the subsequent scenarios being more or less the same as those considered above for text-manipulation

[3] Although DeKeyser (1997, 2007b) argues that the move from declarative knowledge to procedural knowledge does not require much time and it can be accomplished by means of a dozen or so relevant sentences, the present author finds it difficult to concur with such a position. Rather, based on his quite considerable experience in teaching secondary schools students, he is inclined to believe that this goal may be a formidable challenge in some situations and sometimes may fail to be attained at all despite hundreds of examples and opportunities for learners to produce correct sentences with the help of the targeted linguistic feature (cf. Pawlak 2011c).

activities. Alternatively, as postulated by the focus on form approach (Long 1991), the intervention can be integrated with meaningful communication, in the sense that, whether it is more implicit (i.e. recast) or more explicit (e.g. elicitation), it does not impede message conveyance and the activity retains its overall communicative character. In this case, aside from the obvious contribution to explicit knowledge, there is also a possibility that the provision of corrective feedback can set in motion the microprocesses of selective attention, cognitive comparison and noticing the gap, which, in turn, may allow the operation of the macroprocesses of internalization of input, mapping, analysis and restructuring (cf. Doughty 2001), thus having a more direct impact on the development of implicit knowledge. While this undeniably positive effect may be viewed by some SLA experts as constrained by developmental sequences and thus be delayed rather than immediate, it could be as well interpreted within the framework of Skill-Learning Theory (DeKeyser 1998, 2007a, b) as triggering the automatization of procedural knowledge to the extent that it can be rapidly utilized in spontaneous performance, or Sociocultural Theory (Lantolf 2006; Lantolf and Thorne 2007) as brining about internalization and leading to self-regulation. Clearly, such benefits can only be tangible when learners in fact notice corrective feedback and interpret it as such, which is by no means guaranteed when it is highly implicit, as the case might be with some types of recasts (cf. Lyster 1998a; Nicholas et al. 2001; see Sect. 3.5.4.1). It should also be emphasized that although the focus here is mainly on the role of reactive negative evidence, regardless of the context in which the correction occurs (i.e. fluency-oriented or accuracy based), CF can also constitute positive evidence, whenever students are supplied with a model of TL use as part of the treatment. When this happens, the intervention has the potential of affecting the implicit knowledge store similarly to other kinds of input.

The situation is more straightforward when it comes to the contribution of written error correction, regardless of whether it transpires within the framework of product-oriented or process-oriented approaches (cf. Matsuda and Silva 2010), as well as whether the feedback is delivered by the teacher or the learner (cf. Polio and Williams 2010). As illustrated in Fig. 3.1, while such error correction can once again under some circumstances provide a model and therefore constitute to some extent a form of positive evidence for learners' interlanguage systems, the negative evidence it contains primarily contributes to the development of explicit knowledge. This is because, no matter what writing assignment is involved and what form the correction takes, students, of course assuming they will choose to do so, have ample time to consider the indications, modifications, suggestions and comments in their pieces of writing, and perhaps reach for some reference materials, such as pedagogic grammars or dictionaries, and even engage in some additional, in all likelihood controlled, practice in these areas. As a consequence, they extend their conscious understanding of the target language features, which obviously does not guarantee that they will be able to apply them in real-time performance, be it a conversation or a writing assignment that has to be completed under time pressure. As was mentioned above, such increased understanding or rules and their premeditated application is likely to facilitate the proceduralization of declarative

knowledge as well as its more accurate and consistent use on condition that the time constraints are not excessively rigid. Whether or not such knowledge can convert into implicit knowledge is a separate issue that depends to a large extent on the theoretical persuasion of researchers and was addressed above as part of the discussion of the role of correction in the course of accuracy-based activities.

What should also be stressed is that written corrective feedback can also be provided in the course of what is known as *writing conferences* (Goldstein and Conrad 1990; Williams 2002, 2004), in which case opportunities arise for the occurrence of interactionally negotiated feedback (Aljaafreh and Lantolf 1994; Weissberg 2006; Nassaji 2007a). It can also be an integral component of collaborative dialogue during text-reconstruction and text-reformulation tasks (e.g. Fortune 2008; Watanabe and Swain 2007; see Pawlak 2011a, for a review), although in this case pushed output is initiated by other learners. In such situations, though, we no longer deal with written error correction *per se*, but rather with oral feedback during fluency-oriented tasks, the potential benefits of which have been considered earlier in this section.[4]

3.3 Comparison of Oral and Written Corrective Feedback

Although oral and written correction have thus far been often considered jointly in the present work, it is clear that they differ in many important respects which determine the pedagogical choices made by teachers, the ways in which research is undertaken in line with Li's (2010, p. 315) pronouncement that "(…) studies investigating feedback following errors in the learners' written production (…) involve different constructs", as well as their contributions to second language development, a point that was thoroughly discussed in the previous section. These differences are listed in Table 3.1, compiled on the basis of the discussion of relevant issues included in Pawlak (2006a), Sheen (2010c) and Sheen and Ellis (2011), with reference to such key areas as the salience of the corrective force of the response to learners' inaccurate output, the availability of feedback, the timing, type, explicitness, character and complexity of correction, and the contribution of the feedback to the development of explicit and implicit knowledge. What should be emphasized, though, is that the list of differences is by no means exhaustive and it is limited only to those that are deemed the most significant, as it is obvious

[4] Of course, much depends here on how negative feedback is provided in such situations. The potential for the development of implicit knowledge will only come into play when communication between the teacher and the learner or between learners is meaning-based and correction concerns the errors which are present in the piece of writing and the learner's oral contributions. Conversely, in situations when the conference has a clear focus on aspects of the language code and/or it is conducted in learners' first language, it is possible to talk only about correction having an impact on the development of explicit knowledge.

Table 3.1 Key differences between oral and written corrective feedback (based on Pawlak 2006a; Sheen 2010c; Sheen and Ellis 2011)

Oral corrective feedback	Written corrective feedback
Corrective force may not always be clear	Corrective force is usually clear
The feedback is publically available	Feedback only on one's own errors
The feedback is provided online and offline (i.e. immediate and delayed)	The feedback is provided only offline (i.e. it is delayed)
Relatively straightforward focus (i.e. target language form)	Considerable complexity of focus (i.e. many aspects of second language writing)
Both input-providing (e.g. recast) or output-inducing (e.g. clarification request) corrective techniques are available	Both input-providing (direct correction) or output-inducing (indirect correction) corrective techniques are available
The feedback can be explicit (overt) as well as implicit (covert)	The feedback can only be explicit (overt) as the intervention is evident
The correction can be conducted by the teacher, the learner who erred, or a peer	The correction can be conducted by the teacher, the learner who erred, or a peer
Metalinguistic information possible	Metalinguistic information possible
Conversational or didactic	Mostly didactic
Possible direct impact on implicit, procedural knowledge	Only explicit, declarative knowledge affected in the main

that there are numerous more specific divergences concerning, for example, the mechanics of providing the corrective information. In addition, as Sheen (2010c, p. 211) comments, "(…) with the exception of the delayed versus immediate difference, these differences are more a matter of tradition than of necessity". This is evident, for instance, in the case of computer-mediated feedback that will be discussed in Sect. 3.6 in this chapter. Many of the differences mentioned in Table 3.1 will no longer apply here, as such pedagogic intervention may on many occasions share some of the distinctive features of oral and written correction.

As shown in Table 3.1, one of the most noteworthy differences between oral and written feedback is that while the corrective force of the former may in some situations be unclear and open to interpretation, it is usually unequivocal in the case of the latter. The main reason for this is that, due to limited attentional resources, the need to focus on various aspects of the process of speech production and the demands of real-time interaction, the learner may prove to be unable to notice, let alone fully comprehend and process, the corrective reaction in the course of message conveyance. By contrast, the likelihood of misunderstanding the correction and regarding it merely as a comment on the content of one's written production is close to impossible in the case of written feedback, for the reason that the intention of the teacher's or another learner's comment on the margin of an essay is conspicuous by its very presence and it is bound to draw the attention of the student. Another divergence pertains to the extent to which the corrective information is available to the public, with oral feedback being typically provided in front of the whole class or at least the students forming a group, whereas written correction is primarily intended for the student who has erred, barring cases when learners are explicitly

instructed to team up with peers to discuss the problems signaled by the teacher or such inaccuracies are brought to the attention of the whole class by being singled out for subsequent explanation and discussion. Differences can also be pinpointed with respect to the timing of correction. Oral feedback can be supplied both online and be immediate, when an attempt is made to inform learners that they have produced an incorrect form more or less right after the utterance that contains and error, and offline and be delayed, as when the teacher withholds the intervention until the learner has finished speaking or even postpones it until the end of the lesson or the following class. In contrast, written correction is invariably of the offline type or delayed, since the writing assignment is subject to evaluation only some time after it has been completed. There are also marked differences when it comes to the level of complexity of oral and written corrective feedback. This is because the former, as it is currently operationalized in SLA research, primarily involves drawing learners' attention to form in different types of instructional activities, and the latter can be used to respond to multifarious aspects of writing, not only grammatical accuracy but also syntactic and lexical complexity, overall quality, content, mechanics, coherence, cohesion or discoursal features (Polio 2001).

There is much more similarity in relation to the source of correction, as in both cases it could be the teacher, the learner who committed the mistake, or another student who may be appointed by the teacher or do it of his or her own accord. A similar observation applies to the types of feedback, on account of the fact that, irrespective of the mode in which the correction is provided, it can be input-providing and output-prompting, and it can contain metalinguistic information. For instance, in the case of oral production, teachers can avail themselves of a recast that does not require self-correction or some variant of negotiation of form, such as a clarification request or elicitation, that does. A recast is also more implicit than the immediate provision of the correct form and the correction may be accompanied by more or less detailed metalinguistic information. By the same token, feedback provided on errors in written production can be input-providing, or direct, as when the teacher marks the incorrect form and automatically supplies the correct version or even goes as far as to reformulate the whole sentence or paragraph, and output-inducing, or indirect, when errors are only indicated or/and located but it is up to learners to figure out and fix the problem. Moreover, irrespective of the requirement for uptake and repair, the corrective information can be supplemented with more or less extensive metalinguistic comments. The only, albeit crucial, difference lies in the fact that written correction is always explicit since, as pointed out with reference to the salience of the corrective force, learners can hardly be oblivious to the intervention, assuming that they are sufficiently motivated to attend to and process the adjustments, changes and suggestions.[5] It should also be noted that while corrective

[5] Sheen and Ellis (2011) note that offline oral corrective feedback, which is delayed, is also primarily explicit as the corrective intention is transparent to learners. While this is an interesting point, it does not invalidate the overall difference between oral and written feedback in this respect but surely points to the complexity of correction as a phenomenon influenced by an interplay of various factors.

feedback on inaccurate spoken utterances can be both conversational (i.e. it addresses genuine communication breakdowns rather than serving the purpose of eliciting target-like use of a specific form) and didactic (i.e. it is aimed to get the learner to self-correct, even though the message is comprehensible),[6] correction following written errors is usually didactic, perhaps with the exception of situations where inaccuracies are so numerous and so serious that they impede comprehension (Ellis and Sheen 2006; Sheen 2006, 2010a). Finally, it can be assumed that oral and written CF differ in their effects on the development of explicit and implicit knowledge, an issue that was dealt with in Sect. 3.2.

When considering differences between oral and written corrective feedback, it is also instructive to take a look at the study conducted by Sheen (2010c), which is perhaps the only attempt to date to systematically explore the contributions of the mode of correction, coupled with several other variables, on the acquisition of a specific TL feature.[7] To be more precise, the research project sought to compare the differences in the impact of oral recasts and direct written correction, as well as oral and written metalinguistic corrective feedback on the acquisition of English articles. As Sheen (2010c, p. 204) illuminates, "[b]y investigating the efficacy of four individual feedback types on L2 learning, the current study presents a new analysis and affords new insights into how the medium (and, in particular, explicitness of the feedback) influences the effect that CF has on learning". The empirical investigation involved 177 ESL students representing different language backgrounds in a community college in the United States. The participants formed one control group and four treatment groups which differed with respect to the independent variable, namely the applied feedback strategy, with the subjects having their errors corrected when retelling a story in groups of three or in written summaries of this story by means of oral recasts, oral metalinguistic correction, written direct correction, and written metalinguistic correction. Performance data were collected on pretests, immediate and delayed (by 4 weeks) posttests, which consisted of a speeded dictation test (i.e. 14 items involving the use of articles, with time pressure believed to minimize reliance on explicit knowledge), a writing test (i.e. based on a set of four sequential pictures serving as a basis for a story), and an error correction test (i.e. 17 items with two related statements, one of which was underlined as an indication that it contained an error and had to be corrected).[8] Immediately after the last posttest, the subjects were requested to fill in an exit questionnaire that aimed to determine their awareness of the focus on the

[6] The distinction between conversational and didactic feedback is reflective of the somewhat broader differentiation between *conversational* and *didactic reactive focus on form* that was introduced by Ellis, Basturkmen and Loewen (2002), and was discussed in Sect. 1.6.1 of Chap. 1.

[7] In fact, the study uses data from a larger research project conducted by Sheen (2007a, b), which looked at the effects of oral and written correction separately. These data served as a basis for several papers that will be referred to in Chap. 4 during the discussion of research into error correction.

[8] The instruments employed by Sheen (2010c) were adapted from earlier research projects conducted by Butler (2002), Liu and Gleason (2002), and Muranoi (2000).

corrective interventions and the tests they were asked to complete. The findings can be summarized as follows: (1) written direct correction proved to be superior to oral recasts, which Sheen (2010c) explains in terms of the lack of equivalence between the two CF types, connected with the students' failure to notice the corrective force of recasts, (2) despite the differences related to the medium of CF mentioned in Table 3.1, oral metalinguistic correction and written metalinguistic correction proved to be equally effective in promoting learning, which seems to suggest that the level of explicitness is more important than the immediacy of corrective feedback, and (3) irrespective of the medium, error correction accompanied by metalinguistic information generated higher levels of awareness than corrective feedback that did not contain information of this kind. On the basis of these findings, Sheen concludes that "(…) it is not so much the medium of the CF as the degree of its explicitness or the extent of information provided that is important", although she admits that individual differences may also have played a part, and concedes that "[i]t is not clear whether the explicitness itself, or the metalinguistic information, or both contributed to learning" (2010c, pp. 228–229).

The fact that the differences between oral and written error correction may be at times overstated and they may be of less consequence than is assumed also emerges from the study undertaken by Bitchener et al. (2005), who investigated the effect of different types of feedback on 53 post-intermediate ESOL learners' acquisition of prepositions, the past tense and the definite article, which were errors that were committed the most often in the first writing task the participants completed.[9] The students were divided into three groups which received direct written correction (i.e. correct forms were provided above errors that were also underlined), direct written correction accompanied by a 5-min teacher–student conference (i.e. the correction took the same form as before, whereas the sessions provided learners with opportunities to ask questions about the changes and to benefit from additional explanations and examples), and no feedback on the targeted features but only comments on the content and organization of their writing. The participants completed four writing assignments, each 250 words in length, over the period of 12 weeks, with accuracy percentages being calculated for the use of each of the targeted structure in each writing session. The main finding, which is pertinent to the present discussion, was that the most conducive to language development was a combination of full, explicit error correction and individual conferences, at least when it comes to the production accuracy of the past tense and the definite article, both of which are rule-governed and thus viewed as treatable (cf. Ferris 1999).[10]

[9] The study is also invoked in Sect. 4.4.2 in Chap. 4 when comparing the effects of direct and indirect written corrective feedback.

[10] No such positive effects were observed for prepositions, because in this case the average accuracy of performance did not vary according to the feedback type. Bitchener et al. (2005) point out that such an outcome is the corollary of the fact that, in contrast to the past simple tense and the definite article, the use of prepositions is more idiosyncratic, with the consequence that they are less treatable and less amenable to pedagogic intervention.

An interesting interpretation of these results is offered by Sheen (2010c, p. 210), who writes that[11]:

> (…) one can hypothesize that written correction imposes less cognitive load on memory than oral CF, which typically demands a cognitive comparison online and requires learners to heavily rely on their short-term memory. Combining oral and written CF thus might make it possible to optimize learners' processing of the feedback, which, in turn, might expedite L2 learning.

What this comment indicates is that while it may sometimes be useful and indeed unavoidable to deal with oral and written corrective feedback as separate phenomena, as the case might be with theoretical justifications, the discussion of various types of correction or the presentation and evaluation of research results, this stance may be of little relevance to everyday classroom practice where the two mediums have to be adeptly combined for the benefit of learners. This position also exposes the short-sightedness of the frequent exclusion or marginalization of the literature on written corrective feedback in the discussions of the role of correction in the field of second language acquisition research which is primarily focused on the contributions of the treatment of oral errors (Leki 2000), perhaps due to the belief that this type of intervention can contribute to the development of implicit knowledge rather than only explicit knowledge. By considering the place of both modes of error correction in the language classroom, the present work represents an attempt to rectify these problems by striking a balance between the two lines of inquiry and utilizing the insights they have yielded for enhancing the overall quality of this important option in form-focused instruction.

3.4 Error Correction, Syllabus Design and Lesson Planning

Before considering the pedagogical choices that teachers have at their disposal when they are confronted with specific errors in their learners' oral and written target language production, it seems warranted to first adopt a broader perspective and to take a closer look at the role that error correction should be accorded in the syllabus and lesson planning. Since the provision of corrective feedback is an

[11] Admittedly, there is some confusion here as teacher-student interactions in writing conferences are equated with the provision of oral corrective feedback, although they have previously been presented as a type of written error correction. As noted in Sect. 3.2., however, much depends on the nature of such conferences, with some of them providing additional negative feedback in an oral form in the course of meaning and message conveyance while others are more restricted, with the interactions being primarily confined to the inaccuracies in the student's piece of writing and far too controlled for negotiation of form to occur. It would seem that Sheen (2010c) is inclined to take it for granted that meaningful communication is the norm in individual writing conferences, an assumption that is overly optimistic in the opinion of the present author, not only because the ensuing discourse might not allow the kind of correction promoted by Long (1996) or Swain (1995), but also because it may take place in the students' L1, which in fact happens quite often in monolingual contexts.

integral component of form-focused instruction, these deliberations are inevitably related to the respective weight given in a particular program to the teaching of formal aspects of language, such as grammar, lexis, pragmatics or pronunciation, and creating opportunities for learners to engage in meaningful communication. They are also connected with the extent to which the optimal balance is accomplished between the presentation and controlled practice of the targeted linguistic features and their use in pursuit of genuine communicative goals in a single lesson or a series of such lessons.

As was indicated on several occasions throughout this book, the potential of corrective feedback hinges to a large extent on the teacher's ability to adjust it to more general curricular goals, the aims of a particular lesson and the objectives of a specific instructional activity, whether it is a communicative task or an exercise. In other words, negative feedback that is indiscriminate, random, one-shot, used as a punishment or even reflective of the mood of the teacher may be simply ineffective on account of the fact that it will be impossible for learners to tie it in a logical way to the pedagogical agenda pursued in language lessons at a particular point in time. In effect, they will be less likely to notice the corrective force of the utterance in the case of speaking or fully appreciate the corrective information in the case of writing, not to mention understanding, processing, remembering or using a specific linguistic feature accurately in spontaneous performance. There will also be little likelihood that such a haphazard pedagogic intervention will serve as a priming device, assist the restructuring and automatization of declarative and procedural knowledge, or promote interaction in the zone of proximal development. For this reason, it is of paramount importance to carefully orchestrate error correction in the classroom so that it is congruent with the instructional goals the teacher is striving to attain as only in this way can it be the most beneficial and indeed contribute to language development. Even in cases when corrective feedback cannot be directly linked with a specific linguistic item currently being the focus of pedagogic intervention, as is the case with general communicative activities, such as games or unfocused communication tasks, as well as in courses at advanced levels which may draw more on a task-based or topic-based syllabus rather than a structural one, there need to exist some principles according to which errors are corrected and learners should be familiarized with them.

As Pawlak (2006a) argues in his book on form-focused instruction, the best solution in most foreign language settings would be to combine the code-focused and message-centered components in the curriculum, which is to some extent in line with Fotos' (1998) plea that in such contexts it is more prudent to gradually shift the focus from forms to form rather than attempting to instantaneously supplant traditional instruction with entirely communicative pedagogy. More precisely, he proposes that the structural and task-based syllabuses should be used side by side, opting for a combination of what is referred to as *integrated* and *parallel options* (Ellis 2003), that is drawing learners' attention to the same features in the code-based and communication-oriented segments at some times and treating the two as entirely separate at others. This is because the first option appears to be a practical necessity when the PPP sequence is applied and the production phase

is extended over several lessons in which learners are requested to deploy the target features in text-creation activities as well as productive and receptive focused communication tasks. The second, in turn, allows the teacher to make use of communicative activities which are to a large extent independent of the pedagogic agenda of code-oriented lessons and, apart from the obvious goal of stimulating spontaneous language use, they make it possible to focus on a range of language forms, including those that were introduced and taught earlier and might be in need of consolidation or revision.

Pawlak (2006a) also takes issue with Ellis' (2003) suggestion that at elementary levels instruction should be based on communicative tasks, with the code-focused component only beginning to perform a visible role "(…) from the intermediate stage onwards, gradually assuming more of the total teaching time" (2003, p. 237). Instead, he takes the stance that the structural module should be present from the outset because, as he points out in an earlier publication, "(…) lower level students need some tangible signposts of their progress and clear-cut goals, and it is the structural syllabus rather than a task-based one that is better suited to provide these" (Pawlak 2005b, p. 48). These words echo the concerns expressed by Swan (2005, p. 397), who notes that "[t]he naturalistic communication-driven pedagogy characteristic of TBI [task-based instruction] has serious limitations, especially as regards the systematic teaching new linguistic material. Its exclusive use is particularly unsuitable for exposure-poor contexts where time is limited—for most of the world's language learners". In view of such arguments, Pawlak (2006a) suggests relying on Yalden's (1983) *proportional syllabus*, which assumes the presence of both the structural and functional (task-based) components. However, the sequence proposed by Ellis (2003) is reversed, with the code-focused module being the most predominant at early stages of acquisition and the communicative module gradually becoming more and more important as the proficiency of the learners grows and perhaps even replacing the structural syllabus altogether at very advanced levels, such as those represented by English majors in foreign languages departments (see also Pawlak 2013a).

When it comes to the design of language lessons, Pawlak (2006a) postulates that form-focused instruction should at the beginning be *massed*, *intensive* and *isolated* (cf. Ellis 2006b; Spada and Lightbown 2008; Spada et al. 2009, 2010), or such which addresses specific linguistic features over a short period of time, and separates the introduction and controlled practice of the targeted language forms from their use in communicative activities. He argues that only in the course of time should it gradually become more *distributed*, *extensive* and *integrated* (cf. Ellis 2006b; Spada and Lightbown 2008; Spada et al. 2010), or such in which many different features are the focus of the intervention in a more incidental and opportunistic manner. What this means in practice is that instruction should initially mainly rely on the PPP procedure, with the important caveat that, as was mentioned above, the last P of the sequence should not be limited to a single class but rather consist of a series of lessons enabling learners to use the features taught in real-time production and comprehension, thus ensuring the development of implicit knowledge or, to fall back on the constructs from Skill-Learning Theory

(DeKeyser 1998, 2001, 2007a, b), the automatization of procedural knowledge.[12] With time, however, the target features which have been introduced and intensively practiced in a variety of contexts, would be the object of pedagogic intervention more extensively during lessons devoted to other structures as well as general communicative activities, which of course does not rule out the possibility that they could once again become the focus of attention when another usage needs to be addressed or consolidation is needed. On a more general level, as learners' proficiency grows, it is possible to gradually cut down on systematic coverage of aspects of the code and deal with them in a more extensive and integrated manner in response to learners' problems and needs, although, even in foreign languages departments, total abandonment of a structural syllabus in favor of a task-based one is inconceivable with the exception of conversation classes or those intended to integrate different language skills. An important comment is also in order on the status of review lessons that do not have to be based on highly controlled completion, transformation or translation activities, which currently seems to be the norm, but invite learners to employ the TL features in meaning and message conveyance by constructing appropriate text-creation activities and focused communication tasks. The undeniable benefit of this approach would be that, again, learners would have multiple opportunities to attend to form-function mappings, automatize consciously held explicit rules or perhaps even develop implicit representation, all of which would translate into their ability to use target language forms under time pressure in meaningful communication. In short, then, what is being proposed here is that there is no need to maintain steadfast allegiance to focus on forms, planned focus on form or incidental focus on form (cf. Ellis 2001; see Sect. 1.6 in Chap. 1) but, rather, to integrate them in an adept way for the benefit of a particular group of individuals learning a foreign language in a particular context (cf. Kumaravadivelu 2005; Pawlak 2013a).

A question arises at this point as to the place of corrective feedback in this framework, the value of which lies in the fact that it provides the teacher with clear-cut guidelines on how this type of negative evidence can be most beneficially incorporated into classroom practice. In the first place, it is obvious that error correction should be informed by and consistent with the curricular goals pursued by the teacher so that it can contribute to the development of both explicit and implicit language knowledge, and aid the processes of their automatization so that they can be applied accurately and rapidly not only on tests but in spontaneous performance as well. In other words, the main thrust of corrective feedback, be it

[12] The author is fully aware that the extension of the production phase may not always be possible due to time constraints in view of the fact that foreign language instruction is in most cases confined to just a few hours a week. As he explains in a different publication (Pawlak 2006a), however, the problem is not as intractable as it might seem. This is because communicative tasks requiring the use of a particular feature may provide a point of departure for developing other language subsystems and all the language skills, the focus becomes more incidental in the course of time, and teachers devote so much time to controlled practice that such a shift of emphasis can only be advantageous to learners.

written and oral, should be on the grammatical, lexical, phonological or pragmatic elements that are the focus of the pedagogic intervention at a particular point in time, although, clearly, it has to be adjusted to the type of activity in hand. It does not mean, of course, that teachers should not react to other inaccuracies, such as those which impede the flow of communication or involve forms that were taught earlier, but correction of this kind should also be principled and the main focus should be on what is currently being done in the classroom.

The rationale for this stance is related to the fact pointed to by a number of researchers (e.g. Nicholas et al. 2001; Han 2002; Lyster and Mori 2006) that some types of feedback, such as implicit recasts, are more efficacious when students have received prior instruction dealing with a specific item since then they are more likely to notice the corrective move and consider it relevant (cf. Niżegorodcew 2007a). In the opinion of the present author, however, such arguments should be extended to more explicit types of error correction for the simple reason that their effects are to a considerable extent dependent on whether learners are capable of creating a mental link between what they have recently been taught and pedagogic intervention. After all, it is quite uncontroversial that feedback directed at morphosyntactic features, confusing lexical items, pronunciation contrasts or pragmalinguistic aspects that have just been introduced and practiced is bound to be more effective than correction which addresses in a rather haphazard and accidental way a number of forms, some of which may have never been taught and might even be of limited relevance and importance to the learner but happen to be irritating for the teacher. To give an example, what good can possibly come from a CF move that focuses the learner's attention on the pronunciation of a complicated, rare word that is unlikely to be used again in the classroom or outside, or a grammar structure that students are yet to be familiarized with.[13] Similarly, what advantage can possibly derive from a metalinguistic comment in a writing assignment that is clearly beyond the learner's grasp, or focuses on a wide range of problems instead of those which are reflective of the things done in class. This, again, should not be interpreted as meaning that teachers should turn a blind eye to errors unrelated to the main pedagogical focus, but that such a focus should guide the bulk of the corrective feedback that the teacher provides. All of this suggests that one of the most crucial things to be kept in mind about the treatment of learners' errors is that it is likely to work best when it is congruent with curricular goals and an unambiguous link can be established between the majority of the corrective reactions and the linguistic features introduced earlier.

Very similar assumptions should serve as a basis for teachers' decisions in the course of a lesson or a sequence of such lessons. When the PPP is used, for example, no matter whether the goal is to introduce a grammar structure, a set of new

[13] Obviously, such correction is warranted when the learner expects and desires it, as the case might be when the word, phrase or structure is important to him or her because of personal interests. While such individual preferences should without doubt be recognized, the present discussion is aimed to illustrate more general principles according to which corrective feedback should be supplied in the classroom.

words, an aspect of pronunciation or a pragmalinguistic feature,[14] teachers should mainly respond to errors involving the target language item that is being introduced and practiced, with the qualification that the correction should be carefully adjusted to the particular stage in the sequence. Since these issues will be considered in considerable detail in the following section, suffice it to say at this juncture that presentation and controlled practice are perhaps better suited to explicit (direct) intervention, whereas communicative activities allow reliance on the whole gamut of input-providing and output-inducing corrective moves, as long as they are not overly intrusive and do not change a task based on message conveyance into a grammar lecture or a traditional exercise. The same observations apply to written production, although, due to the differences discussed in Sect. 3.3, the range and character of the choices will be somewhat different. Clearly, the focus on a specific TL feature or a set of such features that is inherent in the PPP should not prevent teachers from reacting to other errors they consider to be particularly egregious and harmful, such as those that hinder communication or are related to TL areas that have recently been covered. It should be stressed, however, that such corrections should be occasional and they should not dominate the instructional agenda, because otherwise there is a very real risk that learners' attention will be diverted from the main pedagogic focus, which might, on the one hand, hinder the noticing, understanding, acquisition and use of the new material, and, on the other, turn out to be ineffective when it comes to the learning of the forms being corrected in this way. Obviously, these comments apply in equal measure to one lesson as well as a series of lessons in which the extended production phase is implemented through the application of text-creation activities or focused communication tasks, or what can be referred to as planned focus on form. The challenges will be of a somewhat different nature in the course of review classes since, in this case, a number of TL features which have been introduced and practiced over a certain period of time will be of primary interest to the teacher and all errors involving the use of such forms will require some kind of response. As regards the type, timing and source of the CF, much will depend on the nature of such lessons, with the decisions in these areas being the corollary of whether the teacher elects to rely on traditional exercises or, as suggested above, opts for some version of planned focus on form, accompanied perhaps by timely explanations, clarifications as well as additional examples, should these be requested by learners or viewed as indispensable in the face of the difficulties they encounter.

The approach to error correction will require a major modification in the case of lessons or assignments which are not intended to have a clearly defined linguistic focus. This might be the case, for instance, with whole-class or small-group discussions centering on a particular topic, the completion of decision-making and

[14] Although the presentation–practice–production procedure is typically associated with the teaching of grammar, it is in fact as frequently used in teaching other language subsystems. This is exactly what happens, for example, when the teacher introduces new vocabulary, asks learners to use it in exercises, and then requests them to construct, in speech or in writing, a story necessitating its use.

consensus-building tasks, the performance of communicative games, the presentation of intermediary or final products of project work, or a composition concerning an issue discussed in class. Here, particularly in mixed-ability classes which are the norm in many educational contexts, a multitude of different types of errors can be committed and it is neither advisable nor practicable to respond to all of them. This would not only get in the way of communication but could also confuse learners, let alone the fact that many inaccurate forms might be indicative of their wholehearted attempts to employ TL forms that they are not acquainted with or that are simply over their heads. Therefore, there is a need for selectivity in the provision of corrective feedback which should perhaps be mainly directed at errors which result in a communication breakdown, those that are persistent in the speech of a number of learners, such that students themselves wish to have corrected, or, again, those that reflect the areas that have recently been taught, with the important caveat that in this last case extreme care should be taken to dispense negative feedback in moderation so as to avoid depriving the interaction of its communicative potential.

In such lessons, particularly relevant are the characteristics of effective feedback listed by Larsen-Freeman (2003), who argues that it should be judicious, draw on appropriate techniques that are appropriately focused, and be supplied in a supportive and nonjudgmental manner, with such guidelines holding for both speaking and writing. More precisely, she is of the opinion that teachers should attend to errors that show that a student is ready to learn, or such that involve *emergent forms*, work on errors rather than mistakes, focus on inaccuracies which are reflective of the learner's attempt to convey a message despite the lack of the requisite linguistic resources, react to incorrect language use in accuracy activities, and intervene in the case of problems which require negative evidence for the disconfirmation of an erroneous hypothesis. She also claims that the teacher should carefully adjust the types of feedback to individual learners (cf. Aljaafreh and Lantolf 1994) and go to great lengths to ensure that negative cognitive feedback is coupled as much as possible with positive affective feedback (cf. Vigil and Oller 1976).[15] Obviously, as the majority of language teachers would in all likelihood attest, salutary as they are, Larsen-Freeman's (2003) guidelines are extremely difficult to comply with during naturally occurring classroom interaction, particularly in the course of fluency-oriented tasks where decisions have to be made in a split second and the teachers' attentional resources are depleted by the necessity to pay attention to different facets of the lesson. It is such issues that will be addressed in the subsequent section.

[15] A very similar set of guidelines for effective error correction was proposed by McPherson (1992) on the basis of her study in which she investigated error correction from the perspective of learners. More specifically, she used questionnaires, interviews, diaries and video recordings of correction episodes in order to determine learners' response to and use of corrective feedback. The findings led her to suggest that: (1) correction techniques should be tailored to the current level of learners' proficiency, (2) error treatment should result in learner involvement by encouraging self-correction, and (3) feedback should be provided in a positive manner. Although these principles are intended for oral correction, similarly to Larsen-Freeman's (2003), they can be applied to written feedback as well.

3.5 Options in Providing Corrective Feedback

Before examining the choices that teachers have at their disposal when they encounter errors in their learners' spoken and written output, it is fitting to first consider the nature and scope of these choices as well as the variables which could be hypothesized to influence them. Since the decisions that have to be made with respect to the provision of corrective feedback at the level of syllabus design and lesson planning were elaborated on in the preceding section, here the emphasis will only be laid on the teacher's corrective reactions to inaccurate forms as they appear within the confines of a single lesson, or, even more specifically, the decision-making process practitioners are likely to engage in when contemplating their response to a particular error. It should also be noted at the very outset that the use of the verb 'contemplate' is only meant as a convenient metaphor describing the cognitive processes taking place in the teacher's head but it would be a mistake to understand it literally in view of the fact that, in some situations, these processes will be happening so quickly that the decisions will be taken on the spur of the moment, perhaps even to the point of being automatic in contexts that are perceived as routine or, one might say, prototypical (e.g. a standard reaction to a specific type of error occurring in learners' oral presentations). Clearly, such constraints and limitations are mainly applicable to fluency-oriented activities (e.g. focused and unfocused communication tasks), on account of the fact that accuracy work typically gives the teacher more time for maneuver in the sense of more carefully considering the available options. These decisions should at least in theory be much easier when responding to errors in written output because in this case teachers not only have ample time to make the right choices but they are also not distracted by the need to take heed of the remaining facets of classroom interaction. In practice, however, teachers may also be pressed for time here, with the effect that the corrections might not be as thorough, relevant or transparent as they should given the propitious circumstances. What should also be stressed is the interdependence of the different decisions implicated in providing corrective feedback, which undoubtedly only adds to its considerable complexity connected with insufficient time, limited attentional resources, and the diversity of issues that need to be taken into account. To exemplify, learner involvement in correction in the form of uptake and repair is a function of the choice of feedback type and the requirement for output production (i.e. input-providing vs. output prompting), the nature of error (i.e. learner's familiarity with the feature), or the timing of the intervention (i.e. it is difficult to identify students who erred if correction occurs in a different lesson). All these intricacies only emphasize the validity of Richards and Lockhart's (1996, p. 78) pronouncement that "(…) teaching is essentially a thinking process".

Researchers have proposed several descriptive models with the purpose of illustrating the different components of corrective discourse in the language classroom, placing particular emphasis on the decisions and dilemmas that teachers are routinely confronted with (e.g. Chaudron 1977; Long 1977). Even though some of these frameworks are exceedingly complex and attempt to give justice to as many

scenarios likely to occur in response to the corrective move as possible, they will not be taken into account in the present discussion for a few reasons. First, such a high level of detail, while perhaps necessary in meticulous analyses of classroom interaction would likely be a liability rather than an asset since the aim here is to present only the main instructional options available to the practitioner. Second, there is such a multitude of diverse factors impinging on teachers' pedagogical choices in error correction that it is perhaps a futile task to try to consider their possible consequences as represented in teachers' and learners' behaviors in handling feedback. Third, the models are mainly intended to reflect what happens in the course of oral interactions taking place during language lessons and, although they undoubtedly provide invaluable insights into the process of responding to errors, they are not fully adequate to deliberations over the decisions that can be taken when providing both oral and written correction. Thus, the point of reference in this section will be a list of pivotal issues that teachers face as they react to inaccurate learner output compiled by Hendrickson (1978). These issues are encapsulated in the following five questions:

(1) Should learner errors be corrected?
(2) When should learner errors be corrected?
(3) Which learner errors should be corrected?
(4) How should learner errors be corrected?
(5) Who should correct learner errors?

It is the queries mentioned above that will be addressed in the following sections, first with respect to oral and then written corrective feedback, although the more general options which are the same in both cases will be discussed jointly to avoid unnecessary repetitions. It should also be added that the discussion of the choices involved in the treatment of oral errors will be built around the distinction between fluency-oriented and accuracy-based activities described in Sect. 3.2 because it can be seen as fundamental in teacher decision-making. Basing on a similar rationale, the presentation of the pedagogical choices in the correction of inaccurate language use in written output will often entail differentiation between situations in which errors are marked in one way or another in a piece or writing, and such in which they are negotiated with learners in individual conferences. An attempt will also be made to offer evaluative comments on the utility of the options presented whenever deemed appropriate or necessary, although appraisal of this kind will mostly be based on pedagogical considerations and only minimally draw on empirical evidence in light of the fact that a thorough overview of the relevant research findings is deferred until Chap. 4. It should also be stressed that some of the issues will be discussed in considerably more depth than others, either because they are dealt with in other parts of the present work, as is the case with the overall rationale for correction (Chap. 2) or the variables potentially determining the effects of different types of feedback (Chap. 4), or because the amount of pertinent literature in a specific area is scant, as exemplified by the timing of corrective reactions. Finally, most of the issues addressed below will be revisited when discussing computer-delivered feedback, where, as was made plain in the introduction, many features of oral and written correction converge.

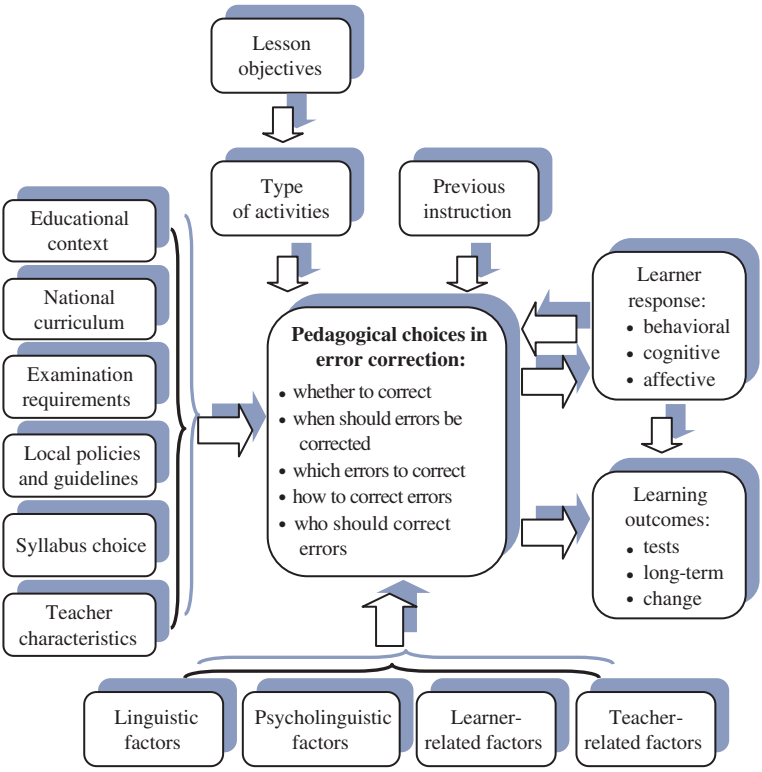

Fig. 3.2 Factors influencing pedagogical choices in oral and written corrective feedback

What should also be emphasized at this point is that the pedagogic choices implicated in the provision of corrective feedback are likely to be influenced by a wide range of factors, some of which are relatively easy to pinpoint and relate to observable behaviors while others exert a more tacit and unpredictable influence on both the occurrence of the corrective move and its consequences. Such variables have been graphically represented in Fig. 3.2, which, however, does not aspire to being an exhaustive illustration of all these potential influences, since there are factors which can unpredictably come into play in a particular situation while the components included in the diagram are likely to interact with each other in intricate ways and there may sometimes be considerable overlap between them. It is undeniable, though, that these factors play a vital part in the process of teacher decision-making and, as such, they will frequently be invoked in the discussion of the possible options in error treatment.

One group of variables is related to the broader *context* in which instruction takes place and concerns the overall opportunities, constraints and exigencies of the *educational setting* (e.g. second vs. foreign), the *guidelines and requirements* specified in the national curriculum (e.g. the key competences to be fostered or the envisaged preoccupation with TL forms), the format and requirements of *national*

examinations (e.g. overall focus, task types, evaluation criteria), the *policies* recommended or enforced by particular educational institutions (e.g. a preference for a specific type of teaching methodology),[16] the choice of the *syllabus* (e.g. task-based vs. functional vs. structural, or some kind of combination of these), and broadly defined *teacher characteristics* (e.g. command of the target language, type and quality of preparation in terms of teaching methodology, beliefs, experience). To give an example, whether or not feedback is provided during communicative activities as well as the ways in which it is done are likely to depend on the importance attached to formal accuracy in official documents, the extent to which erroneous use of TL forms may affect the final score or grade, or teachers' prior experiences, beliefs and knowledge about language teaching methodology gained in the course of college or university education.

More direct influences become relevant when the lesson is in progress. For one thing, the response to an error in speech or writing is determined by the *objectives of a class*, which are directly tied to the selection of *instructional activities*, as well as the focus of pedagogical intervention in previous lessons. It goes without saying, for instance, that a lesson primarily focused on the introduction and practice of new grammar or vocabulary will offer many more contexts for correction, perhaps of more immediate and explicit type, than such which is envisaged as an opportunity for meaningful communication since, in this case, feedback is likely to be less frequent and obtrusive. There will also be, or at least should be, far-reaching differences as regards the handling of error treatment in fluency-oriented tasks and accuracy-based activities, related to the timing, source, focus, or level of explicitness of the corrective reaction, and, particularly with respect to the former, a decisive factor may be whether the incorrect feature has recently been at the top of the *instructional agenda*.[17] The decision how to respond to an inaccurate sentence or utterance also hinges on what is labeled in Fig. 3.2 as *linguistic*, *psycholinguistic*, *learner-related* and, yet again, *teacher-related factors*. As to the first of these, the occurrence and nature of correction may be a function of the perceived difficulty of the structure that has been erroneously used, its similarity to other TL forms, or transfer from the L1 as well as other languages known to the learner.[18]

[16] In Poland such limitations are more likely to be introduced in private rather than in state schools, in which teachers have considerable freedom when it comes to the methodological choices they make.

[17] Obviously, the picture painted here is to some extent idealized in the sense that not all teachers take these as well as other variables mentioned here into consideration when providing corrective feedback.

[18] We are talking here about a subjective perception of difficulty rather than objective reality, since structures that teachers consider to be simple may in fact pose a considerable challenge to learners. Ellis (2006a), for example, discusses learning difficulty in relation to implicit and explicit knowledge. In the case of the former, he lists such criteria as frequency, saliency, functional value, regularity and processability, whereas in the case of the latter he mentions such factors as conceptual clarity and metalanguage. Such issues are also discussed by DeKeyser (2005), who focuses on problems of meaning, problems of form, and problems of form-meaning mappings (see Sect. 4.2.2. in Chap. 4 for further discussion).

While such a high level of awareness can hardly be expected from most practitioners, they might also base their choices on their judgment as to whether the learner represents the right level of interlanguage development, with the caveat that an assessment of this kind can for obvious reasons be only impressionistic. There is also a multitude of learner-related factors that can guide teachers in their decisions as to whether, when, what and how to correct. Since a detailed discussion of the relevant individual learner differences is beyond the scope of this chapter because these variables will be addressed more thoroughly in Chap. 4, suffice it to say that teachers' decision-making can be, among others, influenced by learners' ability in the target language, age, behavior, anxiety, self-esteem, motivation, learning style or interest in a class.[19] Finally, teacher-related factors should be viewed as evanescent and temporary rather than fixed characteristics, and they might be reflective of the teacher's perception of a particular student, the willingness to reassert his or her authority in the face of rowdy and intractable conduct, or simply his or her disposition on a given day. To give an example, direct correction in a piece of writing is more likely to occur when, in the view of the teacher, learners' level of proficiency precludes them from fixing the problem on their own, he or she believes that they are psycholinguistically ready to acquire the feature, with the qualification mentioned above, there is no danger of putting them on the defensive or damaging their self-esteem, and the teacher is irritated by the high incidence of errors involving a form that students should have mastered a long time ago. By contrast, error correction may be withheld when it is clear that the erroneous feature is far beyond the grasp of the learner, the student is known to respond badly to corrective feedback and his motivation could be lowered, or the teacher has to do the marking in a hurry being inundated by a huge number of writing assignments.

The last set of issues is related to the efficacy of corrective feedback which, on the one hand, is the outcome of the choices made by the teacher, and, on the other, has a considerable impact on how the provision of feedback proceeds, a relationship that has been indicated by the directions of the arrows in Fig. 3.2. To be more specific, the *immediate reaction of the learner* to a corrective move is bound to determine the subsequent steps taken by the teacher, especially if he or she views the inaccurate use of a particular feature as a serious problem. Following Ellis (2010b), this response can be *behavioral* (e.g. self-correction), *cognitive* (e.g. attention and noticing) as well as *affective* (i.e. attitudes towards correction), with all of these facets being related to empirical evidence in the following chapter. For example, when the learner pays no heed to an implicit recast, the teacher may switch to an output-inducing option by trying to elicit the correct form, and then a more explicit correction mode, providing an explanation, perhaps even in

[19] Again, the focus here is in most cases on teachers' subjective beliefs and perceptions rather than on objective data obtained by means of research instruments. In other words, the teacher, based on his or her familiarity with a particular student, might come to the conclusion that he or she is shy or diffident, but the extent to which it is true in reality would have to be established through the administration of specific tools that can be used to determine an individual's personality or preferred learning styles.

the first language, or maybe involving another student in the corrective discourse. On the other hand, when the learner manifests his or her attention by asking the teacher to explain, but at the same time is reluctant to produce the correct form and visibly anxious, the teacher may abandon the correction and carry on with the lesson. What comes to the fore in such situations is also the above-mentioned interdependence of different variables as it is clear that apart from being impacted by the learner's response, such decisions will also be guided by some of the considerations touched upon earlier, such as the teacher's beliefs, the inherent features of the targeted form or the personality of the learner. It is also possible to consider the impact of the efficacy of CF on teacher decision-making on a more general level. This is because teachers may draw conclusions about the contribution of their corrective reactions on the basis of *learners' performance on tests*, and also evident changes in their ability to identify and deal with inaccuracies in oral and written language production. For instance, teachers might decide to hold their treatment practices to close scrutiny when it turns out that frequent correction does not visibly affect learning outcomes. Conversely, they may become convinced of the effectiveness of their approach to CF when learners manifest the kind of development that has been documented by Aljaafreh and Lantolf (1994). The final point concerns the relationship between learner immediate response to correction and *long-term development*, since, despite the fact that successful uptake and repair do not constitute evidence of acquisition, there are studies that have provided evidence for a positive impact of corrective interventions in this respect (e.g. Loewen 2005; Loewen and Philp 2006).

3.5.1 Should Learner Errors be Corrected?

Since a thorough discussion of the theoretical, empirical and pedagogical arguments for and against the provision of oral and written corrective feedback was included in Chap. 2, it would be unwarranted to recount them in detail at this point. It will be sufficient to emphasize here that, despite numerous reservations about the soundness, effectiveness, feasibility and affective costs of error correction, some of which are quite valid, a compelling case can be made in favor of this type of pedagogic intervention on the grounds of the tenets of a number of theories and hypotheses, both psycholinguistic and sociolinguistic in nature, the mounting empirical evidence as well as practical considerations. Rather than rehashing ideas that have already been considered elsewhere, the present section is aimed to delve into a more concrete interpretation of the 'whether to correct issue' by relating it to a specific situation in which an error is committed in spoken or written output, and the teacher has to decide whether or not to respond to it. In other words, the focus will not be on the beliefs, expectations or preferences of practitioners which may stem from prior experience, theory, research or methodology, but, rather, an initial assumption will be made that teachers are convinced of the value of CF but have to decide on a course of action to take in response to an inaccurate utterance

generated by a particular learner, using a particular linguistic feature in a particular context. As a result, the approach adopted here to answering the question whether oral and written errors should be corrected is similar to that embraced by Allwright and Bailey (1991), who focus on specific choices as part of corrective discourse, rather than that espoused by Sheen and Ellis (2011), who elect to draw upon general pedagogical considerations.

When it comes to oral corrective feedback, a fundamental issue that should be addressed at the very outset is the teacher's ability to notice the error as it occurs in classroom discourse (Long 1977). One potential source of difficulty in pinpointing an inaccurate language form is the fact that, especially in the foreign language context, the vast majority of teachers are not native speakers of the languages they teach, with the outcome that their own communicative competence may be limited in many respects.[20] While this may not apply so much to the rules of grammar, which most teachers tend to have at their fingertips, things are more complicated in the case of some aspects of pronunciation, vocabulary, and particularly sociolinguistics and pragmatics, because there are nuances in these areas that cannot easily be acquired from the coursebook and require abundant exposure and copious opportunities for naturalistic language use. As Allwright and Bailey (1991, pp. 100–101) illuminate, "[t]eachers who are non-native speakers of the target language may perhaps be expected to have a rather special problem in terms of their ability even to notice learners' errors. They may ask what their own place is on the interlanguage continuum. Non-native teachers cannot be expected to treat errors that they cannot detect".[21] Another reason why pinpointing errors may be problematic for all teachers, irrespective of whether they are teaching a language that is their mother tongue or not, is the complexity of classroom interaction, especially in the case of communicative activities, where things are happening very quickly, there is scarce time for monitoring, and the limited attentional and working memory capacities make it difficult to keep track of everything that is being said. This is because a learner may be speaking so fast and making so many mistakes that the teacher, who is also expected to pay attention to the content of the message, may not be able to pick up on the majority of errors, not to mention the fact that overlaps are common in classroom interaction.

[20] The author is fully cognizant of the claims of the English as a Lingua Franca (ELF) movement as advanced, for example, by Jenkins (2000), Pennycook (2003), Seidlhofer (2004) or McKay (2002, 2011). He is of the opinion, however, that although their descriptions of the features of interactions between non-native speakers are insightful and they may even be reflective of the level of attainment of the majority of learners, they should not provide a point of reference for pedagogy.

[21] It is interesting to note, however, that research on error gravity clearly demonstrated that non-native teachers tend to be more severe in their reactions to learner errors than native speakers, both those who are teachers and those who are not (e.g. Hughes and Lascaratou 1982; Ludwig 1982; Davies 1983; Rifkin and Roberts 1995; James 1998; Pawlak 2003, 2004b). It would seem, however, that greater severity on the part of non-native teachers can in most cases be accounted for by the fact that their corrections focus on linguistic forms that are taught in class and are in a sense considered to be basic.

Such difficulties are considered by Pawlak (2004b, p. 100) in his analysis of the effectiveness of error correction practices of Polish and American high school teachers of English and are encapsulated in the following comment:

> (…) it was much more difficult for the teachers to notice and correct mistakes when they had to concentrate on the content of the students' contributions in order to be able to follow up on their ideas and control the direction of a given exchange. This task became even more complex when the learners produced lengthy utterances and the nature of their responses was unpredictable due to the local construction of discourse. In such cases, even if a contribution was fraught with deviant forms, it was typically errors occurring at the end or those the students themselves attempted to self-correct that were most likely to be noticed and treated.

When errors are in fact noticed despite all such potential difficulties and distractions, whether or not the teacher decides to intervene is to a large extent a function of the variables included in Fig. 3.2, many of which will enter into intricate interactions with each other. In the first place, there is a question concerning the overall objectives of a particular class, since as was already mentioned above, a focus on language forms brings with it predominant use of accuracy-based activities, during which error correction is bound to be more frequent, while a focus on meaning and message communication, as manifested by the use of fluency-oriented tasks, is likely to reduce the amount of corrective feedback, although it does not and in fact should not eliminate it altogether given the theoretical and empirical arguments discussed in Chap. 2.[22] Another important influence on the decision whether or not to treat an error is the extent to which it can be tied to recent instructional foci as it is indisputable that teachers are more likely to respond to inaccurate utterances involving the use of a feature that has been the subject of intensive practice in the previous lessons than such which are only very loosely related to the current pedagogic agenda. In fact, it could be argued that in some situations this factor might even override the intended orientation of the lesson or the type of activity being performed in its specific segment.

The occurrence of corrective feedback also depends on the learners' level of proficiency, as juxtaposed to the learning difficulty posed by a specific form. Although a distinction can be made here between the learning challenge in terms of explicit and implicit knowledge, with the two differing considerably with respect to some structures (e.g. English third person 's'), few teachers are likely to be familiar with this differentiation, let alone use it as a guide for their corrective decisions. In fact, it would seem that rather than thinking about the place

[22] Obviously, such plans may be subject to major modification as a result of the dynamic character of classroom interaction. In effect, a lesson that is intended to focus on a grammatical structure may be all of a sudden transformed into one that enhances communication due to some unpredictable event, as illustrated by the well-known case of Igor described by Allwright (1980, p. 180). The same could be said about a lesson that is aimed to focus on communication, but a high incidence of errors in the use of a grammar structure that students should, in the teacher's view, be conversant with provides an impulse for changing its character into a review lesson. What we are referring to, though, are prototypical cases and not such unexpected departures from the original plan.

of students on the interlanguage continuum or their psycholinguistic readiness, as some scholars would have us believe (e.g. Allwright and Bailey 1991; Mackey and Philp 1998), teachers primarily base their responses to errors on learners' conscious knowledge of the TL feature, typically equated with their familiarity with the relevant rules. Whatever their understanding of their students' proficiency, practitioners may choose to react to an error if they believe that the linguistic feature is within the learner's grasp, or, to borrow a construct form Sociocultural Theory (Lantolf and Thorne 2007), can be placed within their zone of proximal development. By contrast, they may elect to ignore the very same problem in the speech of another learner whom they perceive as unable to grasp and process the correction. Such selective treatment may be reflective of yet another consideration, that is the fact that while the oral production of a weaker learner will in all likelihood be dismissed as a valuable source of input for his her peers, they are very likely to treat as a model the output of a more advanced student. It is clear that if serious errors in such output go uncorrected, there is a danger of learners formulating incorrect hypotheses or at least failing to reject the incorrect ones they are currently operating with (Schachter 1988; see Sect. 2.4.3 in Chap. 2). Aside from their perceptions of learners' proficiency, teachers may also decide to turn a blind eye to errors involving items that are way over the head of the majority of a learner group, as the case might be with a Polish beginner saying 'I know her for a long time'* instead of 'I have known her for a long time', since he or she has not been taught the present perfect tense and neither have his or her classmates. In fact, in this case, the incorrect production could be related to what Edge (1989, p. 11) calls an *attempt*, or a situation in which the student "(…) is trying to mean something but has no real idea of how to structure that meaning correctly (…)". While some attempts may provide a chance for opportunistic learning (cf. Harmer 2007b) and CF is to some extent justified, those requiring the use of more difficult structures are often ignored or the teacher just provides the correct form and proceeds, but this option will be considered later as it falls within the purview of the techniques of error correction or the 'how' question.

Many of the issues which have thus far been touched upon apply in equal measure to the provision of written corrective feedback, although their nature and scope are quite predictably affected to some extent by the different medium. The problem of detecting errors arises here as well owing to the teacher's lacking communicative competence but it is partly alleviated by the fact that the response to learners' incorrect output does not happen in real time and does not place such heavy demands on the practitioner's attentional resources. In other words, it is possible that, also in this case, the fact that the teacher is not a native speaker might preclude him or her from noticing some deviant language use.[23] Although pronunciation errors will no longer apply, they will be replaced with new challenges, such as spelling errors, inaccuracies in the use of intersentential grammar,

[23] But they can also be more severe in their corrections as well as focus on different errors than native-speakers, both as a result of cross-linguistic influence and educational experiences, as a recent study by Hyland and Anan (2006) has demonstrated.

which will become more evident, attention will have to be directed at the level of formality, and there will be a much more pressing need to focus on content and organization. At the same time, the provision of written feedback is usually much less time-pressured than oral correction and, if the teacher takes enough care marking an essay or composition, there is much less likelihood than in the case of classroom interaction that inaccuracies which ought to be responded to will escape his or her attention.

As to the other factors considered above, the objectives of a lesson or the type of activity will be much less relevant, because although it is possible to picture the teacher circulating among groups and correcting inaccuracies in the sentences that students were asked to translate, the treatment of written errors will more often than not take place offline and outside the classroom. Still, it is conceivable that some writing assignments will be oriented toward more free language use and the development of writing skills in and of themselves, as is the case with letters, essays or compositions, with the effect that correction of formal errors will be of lesser priority. On the other hand, some pieces of writing may be assigned with a view to practicing very specific grammatical or lexical TL features, which inevitably entails correction of errors in the areas being part of the pedagogical agenda. The impact of recent instruction, learners' proficiency level and their willingness to experiment with the target language will all determine to some extent which errors are responded to and which are ignored. However, it should be noted that the need for intervention may be regarded as less urgent because by its very nature written correction is less public (see Table 3.1) and there is little danger of other learners being exposed to inaccurate input. The individual and private character of correction may work in both ways, however, since the teacher may be less concerned with the damaging effects of negative affective feedback in the light of the fact that the risk of public demonstration of the learner's lack of competence is minimized.

3.5.2 When Should Learner Errors be Corrected?

The issue of the timing of error correction is reflected in the distinction between *online* and *offline* pedagogic intervention that was discussed in Sect. 3.2 as one of the key differences between oral and written corrective feedback. It was stated there that while the former can be both immediate and delayed, the latter always occurs some time after a given piece of writing has been completed, unless, of course, we are dealing with synchronous computer-mediated communication with the aid of instant messaging software (see Sect. 3.6). In reality, however, things are more complicated than they might seem in the case of the treatment of oral errors because it is in fact possible to differentiate not between two but three options here, namely *immediate correction*, *delayed correction* and *postponed correction*. As Allwright and Bailey (1991, p. 103) explain, "[t]he teacher may deal with it [an error] immediately, or delay treatment somewhat (for example, until the learner

finishes with the message she or he was trying to convey), while still treating the error within the boundaries of the same lesson in which it occurred. Alternately, teachers may postpone the treatment for longer periods of time". It would appear that the selection of one of these three options primarily depends upon the nature of the instructional activity in hand at a particular point of a lesson, or, to be more precise, on whether it is fluency-oriented or accuracy-based, a distinction that is in many ways critical to the present chapter and the whole book.

When a learner makes an error involving the use of the linguistic feature that is the main focus of highly controlled text-manipulation activities (e.g. sentence completion or multiple-choice), the optimal solution appears to be immediate correction which would also be explicit (overt) enough for the learner to notice, with the correct form being supplied by the teacher or elicited from the student.[24] The rationale behind such a stance is closely tied to the pedagogic focus of accuracy-based work which is mainly aimed at the development, proceduralization, and some degree of automatization of explicit knowledge (see Sect. 3.2). Given this, it would make little sense to delay the correction when the learners need to know immediately whether the form they have used is correct or not so that they can confirm or modify their hypotheses, fine-tune their understanding of how a particular structure works, and automatize fully correct rather than interlanguage forms (cf. Leeman 2007). In fact, were the teacher to wait with the intervention until the end of the activity or the lesson, there would be the danger of missing out on what Larsen-Freeman (2003) has so aptly labeled the *teachable moment*, when a learner's attention is maximally focused on the problem, and risking the same error being repeated in the following sentences by other students.

By contrast, all the three options can be of use to practitioners in the course of fluency-oriented work which may involve text-creation activities as well as focused and unfocused communication tasks, with the caveat that their value will also depend on a number of factors illustrated in Fig. 3.2 and it is closely related to the other choices made by the teacher. One possibility is to correct the error immediately after it has occurred and although this solution is frowned upon by a number of methodologists (e.g. Edge 1989; Ur 1996; Harmer 2007b) and may in fact be dispreferred in classroom discourse (Seedhouse 2004), it seems to be justified at least in some situations on the grounds of both the theoretical positions elaborated upon in Chap. 2 and the available research findings. To be more precise, support for such timing derives from the Noticing Hypothesis, the Interaction Hypothesis, the Output Hypothesis, Skill-Learning Theory, the Counterbalance Hypothesis, Relevance Theory and Sociocultural Theory. What is more, most of the empirical evidence speaking to the effectiveness of error correction in its entirety or the utility of specific types of feedback comes from empirical investigations in which teacher feedback immediately followed the occurrence of the erroneous form (e.g. Ellis 2007; Pawlak 2008b; Lyster and Izquierdo 2009; Yang and Lyster 2010). Obviously, it is by no means being suggested here that teachers

[24] The issues concerning the type and source of corrective feedback are only mentioned here in passing because they will be addressed at more length in the following sections.

should always interrupt students when they are trying to engage in meaningful communication, because the value of this option depends on several important variables, such as the instructional target, recency of instruction, the corrective technique used or learner characteristics. While such issues have either already been touched upon or will be dealt with in the following sections, it should be made clear that immediate feedback in the course of message conveyance is likely to work best for errors in the use of a specific linguistic feature (i.e. it should be focused; see Sect. 3.5.3), preferably such that has recently been the pedagogic focus, when it is not overly intrusive and it does not hamper the flow of communication, and the learner is not overly sensitive to being corrected in public. It is also rather uncontroversial that this kind of intervention may be inevitable in the case of a major communication impasse which cannot be resolved in any other way, which is acknowledged even by avid opponents of immediate error treatment (cf. Harmer 2007b).

The teacher can also opt for delaying the corrective move until a learner has completed a turn, has come to the end of a presentation, has finished participating in a communicative activity, such as a role play, or an opportunity for correction presents itself in the middle of his or her contribution, for example in the form of a *transition relevance place* (i.e. a moment in a conversation when a change of the speaker is possible, as when a sufficiently long pause occurs; cf. Sacks, Schegloff and Jefferson 1974; Schegloff 2000).[25] This option may be most suitable in situations when there is no impending communication breakdown, the teacher does not wish to draw learners' attention to one specific TL feature and the correction represents opportunistic teaching, there may be a need for a longer explanation, or the learner is likely to be intimidated, humiliated or discouraged from future participation. Whatever the reason for delaying the provision of corrective feedback, there are grounds to believe that this type of intervention is characterized by organizational features that make it distinct from immediate correction. Rolin-Ianziti (2010), for example, conducted a study grounded in the framework of conversation analysis and demonstrated that there is a systematic organization in delayed correction in which two distinct approaches can be identified: (1) teacher-initiated/completed correction, and (2) teacher-initiated student correction. As the researcher points out, "[i]n the first approach the teacher both quotes the incorrect form and replaces it with the correct form with no or reduced student participation. (…) By contrast, in the second approach the teacher uses initiators (category questions, DIU [designedly incomplete utterance] or requests to quote from the role

[25] At the *transition relevance place* (TRP), the norms of speaker change come into play, according to which: (1) the current speaker may select the next speaker, (2) if the speaker does not do so, any other participant may self-select, and (3) if nobody else takes the floor, the current speaker may but does not have to continue (cf. Sacks, Schegloff and Jefferson 1974; Seedhouse 2004). How speaker change in the language classroom occurs depends to a large extent on the pedagogical focus of the lesson. It is clear, for example, that while deciding the right to speak will mainly rest with the teacher in the course of accuracy-based activities (i.e. form-and-accuracy contexts), it may be much more distributed during fluency-oriented tasks (i.e. meaning and fluency contexts) (cf. Seedhouse 2004).

play) to prompt the student to self-correct in the next turn, thus offering the student the opportunity to participate in the correction" (2010, p. 197).[26] As for the value of these two options, it would seem that an attempt to ensure greater learner involvement in the process of correction is commendable and such involvement could be additionally enhanced by fostering the student-initiated teacher-correction trajectory (i.e. where learners realize that they have produced an inaccurate form and request teacher assistance), which failed to be used consistently in the data analyzed in the study. Such issues, however, are connected with the source of correction and will be discussed in more detail in Sect. 3.5.5.

Finally, it is possible to postpone the provision of corrective feedback until the end of a lesson or even put it off until the next class, a solution that is recommended by a number of methodologists (e.g. Edge 1989; Bartram and Walton 1991; Harmer 2007b) for virtually all activities aimed to foster genuine communication. In the view of the present author, however, it is perhaps best suited to situations where students are mainly expected to communicate with each other, with the teacher remaining on the sidelines, as the case may be during a discussion on a particular topic or a communication-oriented game which is performed by the class as a whole, or different types of unfocused communication tasks that are completed in pairs or small groups. There is also some evidence that teachers display a proclivity for withholding correction until later in such situations, although this belief does not always translate into actual classroom practices (cf. Basturkmen et al. 2004). Although the options mentioned above are also viable here, the teacher might decide to act as an observer, jot down the mistakes and respond to them afterwards by sharing the problematic utterances with the students (e.g. by putting them up on the board or distributing handouts with examples of these utterances), and perhaps involving them in the process of correction.[27] Allwright and Bailey (1991, p. 103) also remark that "(…) oral errors, particularly if they are patterned and are shared by a group of learners, may form the starting point for a future lesson".

Valuable as it might indeed be in some situations, the main limitation of this approach is that learners may simply fail to remember their erroneous utterances

[26] It should be noted that there are some problems with categorizing the type of correction that is used in the study conducted by Rolin-Ianziti (2010) as it falls somewhere in between what has been termed in this section as *delayed correction* and *postponed correction*. To use the terminology introduced by Jefferson (1987), she focuses on *exposed correction* (i.e. the conversation is temporarily suspended to discuss a form-related problem) rather than *embedded correction* (i.e. errors are dealt with without the conversation being put on hold), which would indicate that the cases she discusses are representative of postponed rather than delayed correction. On the other hand, however, she confines her analysis to situations in which the corrective feedback is delayed by 1 or 2 min and directly follows the performance of a communicative activity (a role play), which means that it can be classified as delayed correction according to the criteria adopted here to distinguish between the different options in the timing of CF.

[27] As was the case with the discussion of the timing of feedback in accuracy work, issues related to its type and source are only signaled here in light of the fact that they will be discussed in more detail later in this chapter.

after some time has elapsed, a problem that was highlighted by Long (1977) in his early discussion of pedagogical choices in error treatment. Another shortcoming is that by separating the incorrect form and the feedback move, teachers waive the requirement for the contingency of the two and the recommendation that pedagogic intervention should occur within the so-called window of cognitive opportunity (cf. Doughty 2001), both of which are postulated by the proponents of cognitively oriented interaction-based theories. In effect, learners may be deprived of the chance to make internal comparisons and notice gaps or holes in their interlanguages, microprocesses which are hypothesized to increase the salience of form-meaning mappings as well as set in motion the macroprocesses of integration and restructuring (see Sect. 2.4.1.2 in Chap. 2). Obviously, the guidelines presented here for the timing of corrective feedback in fluency-oriented tasks, whether they pertain to immediate, delayed or postponed intervention, should only be regarded as tentative suggestions rather than hard-and-fast, inviolable rules because the decisions made by teachers in this respect are bound to be highly sensitive to the specificity of a particular context.

As mentioned above, written corrective feedback is always associated with some kind of delay between the commission of an error and the onset of intervention, but it should be noted that this delay can be of shorter or longer duration. For example, the teacher could try to address some of the errors immediately after a learner or a group of learners have completed an exercise in which they were supposed to link ideas into a coherent and cohesive paragraph, or they have written a short narrative, in which case the situation would be to some extent comparable to delayed correction of oral errors. Alternatively, a scenario that is without doubt much more common, the teacher may collect the written work, whatever form it takes, and respond to errors at a later time in the privacy of the home, with the effect that learners might have to wait several weeks for the feedback. The potential shortcomings of such postponed correction are as acute here as in the case of oral correction, perhaps not so much because learners will not remember the forms used as these will be indicated in some way in a piece of writing, but because some of them may simply lack the motivation to go over something that they wrote a while ago and that may have ceased to be of relevance, or to pay attention to inaccuracies that are not longer the pedagogical focus (cf. Truscott 1996). For this reason, it is of utmost importance to come up with ways to encourage learners to ponder over the errors they made, either through the use of a specific type of corrective feedback, organizing a remedial session or promoting peer involvement, but these issues will be tackled in the following subsections.

While written correction typically takes place offline, it is also possible to envisage a situation in which it is more immediate, which could happen, for example, during a writing conference. This is because in this case, a learner might attempt to fix a problem under the guidance of the teacher and when he or she fails to do so, the teacher can intervene by providing another clue or supplying the accurate form right away. Truth be told, however, a scenario of this kind is highly unlikely in foreign language contexts, where written work is usually marked outside the classroom and teachers do not have ample time to discuss problematic

areas individually with the students. All of this demonstrates that although timing may be manipulated to some extent in the case of written feedback as well, it only happens sporadically or not at all, which explains why written correction tends to be labeled in the literature as invariably offline.

3.5.3 Which Learner Errors Should be Corrected?

The selection of errors to be corrected, whether they occur in oral or written language output, can be based on different criteria, some of which are connected with the inherent features of the targeted form or the nature of the error which involves the use of this form, and others are more representative of individual or contextual factors. Since the latter concern issues related to learners' level of advancement or their psycholinguistic readiness, previous instruction, the objectives of the lesson or the nature of activity being performed, the focus in this section will primarily be on the former, which, does not mean of course that reference to other factors can be avoided for the reason that, as has been repeatedly emphasized throughout this chapter, all of these variables are intricately interwoven.

As Sheen and Ellis (2011, p. 599) explain, "[a] key issue is whether teachers should aim to correct all the linguistic errors in a text or only some. Selective correction is widely promoted by language teaching methodologists". In fact, over the years a number of proposals have been advanced as to which errors should be targeted by the intervention, some of which were motivated by theoretical positions, others drew their support from the findings of research, and others yet were more pedagogically oriented. The followers of audiolingualism with its roots in behaviorism as well as the strong version of the Contrastive Analysis Hypothesis (Wardhaugh 1970) claimed that teachers should direct instruction, including error correction, at *features that are different* in the second language and the mother tongue, as this will minimize the danger of the formation of wrong habits. Basing his recommendations on the findings of Error Analysis, in turn, Corder (1967), was of the opinion that it is *errors* (i.e. deviant forms which cannot be self-corrected because the learner is not familiar with the rule) rather than *mistakes* (i.e. performance errors that can be repaired by learners themselves when incorrect forms are pointed out to them by the teacher or a more proficient language user) that should be the focus of treatment. Indeed, this stance has been promulgated to the present day, as is evident in one of the rules of effective correction offered by Larsen-Freeman (2003) and mentioned above. There is also a suggestion that feedback should primarily target *global errors*, which affect overall sentence organization and are likely to spark off a communication breakdown, and not *local errors*, which affect only one element in a sentence and thus do not pose a threat to the attainment of communicative goals (cf. Burt and Kiparsky 1974; Burt 1975). Yet another proposal which has been put forward by Krashen (1982) and is illustrative of the tenets of his Monitor Model is that error correction should be confined to *simple and portable rules* which can be viewed as learnable (see also Sect. 2.3).

Interesting and justified as some of them might be from a theoretical point of view, most of these recommendations are unfeasible or at the very least extremely difficult to implement in actual teaching. When it comes to basing decisions about error correction on the differences between L1 and L2, it is obvious at present that the strong version of the Contrastive Analysis Hypothesis is no longer tenable and it is customary right now to accept its weak version (cf. Wardhaugh 1970), which focuses on a posteriori *explanation* of linguistic difficulties. In fact, in order to reflect the complexity of the relationships between different language systems that are known to the learner, specialists prefer to talk about *cross-linguistic influence* (cf. Odlin 2003; Ringbom and Jarvis 2010), with research in this area providing few tangible, fail-safe insights for form-focused instruction, including the provision of corrective feedback.[28] There are also problems with the distinction between errors and mistakes because they are not easy to tease apart, either because of the exigencies of naturally occurring classroom interaction where decisions often have to be made in a split second and there is no time to ask the learner to self-correct, or simply because the student is not around to prove that he or she knows the relevant rules, as is the case with written feedback. On top of this, some scholars contest such a clear-cut differentiation and the pedagogic proposals advanced on its basis. Johnson (1996), for instance, argues in line with the premises of Skill-Learning Theory that mistakes are much more than mere performance phenomena because they can also indicate processing problems when learners are required to produce linguistic features under real operating conditions. He also writes that "[i]f this is the case, the subject of *mistake correction* becomes an important one in language teaching" (1996, p. 123; emphasis original).[29] In a slightly similar vein, James (1998, p. 247) points out that, depending on circumstances, both slips, mistakes and errors should be responded to but this should transpire in different ways in accordance with the principle that "[t]he greater the amount of revision required of the learner to correct an utterance, the less rigorous should be the teacher's inclination to demand it – by eliciting correction". He goes on to say that, in the case of a slip, a raised eyebrow may be enough, when a mistake occurs, a prompt might be in order to get the learner to alter his or her hypothesis, whereas an error might call for what he terms *remediation*, or some new teaching leading to the restructuring of the knowledge of the problematic TL feature. Not less ambiguous is the distinction between global and local errors since

[28] Ringbom and Jarvis (2010) offer the recommendation that teachers should make use of, or perhaps even overuse, crosslinguistic similarities at early stages of second language learning, which stands in stark contrast to the claims of the strong version of the Contrastive Analysis Hypothesis. The scholars point to several contextual and learner variables, however, that may constrain the effectiveness of such instruction. More importantly, it would clearly be groundless to suggest that this approach can guide teachers in any systematic way in their decisions as to which inaccuracies should be responded to.

[29] Johnson (1996) argues that what is necessary in such situations is extrinsic feedback in the form of a model provided by the teacher after the event (e.g. rewriting erroneous sentences or reformulating utterances in a transcript of learner performance) as well as opportunities for retrial under real-operating conditions.

how an error is categorized may depend on the situation, and, as is the case with errors and mistakes, teachers often have insufficient time to determine the intentions of the learner, irrespective of whether the inaccurate form comes up in the midst of classroom discourse or in one of a hundred essays waiting to be marked. Finally, given all the theoretical, empirical and pedagogical arguments provided in Chap. 2, Krashen's (1982) position is also unwarranted and unrealistic, as CF should be employed to deal with a much wider spectrum of erroneous forms than only the simplest, learnable ones.

One promising solution to the problem of selection of inaccuracies in learners' oral and written output is the use of what Sheen (2007b) has referred to as *focused corrective feedback*, which can be defined as correction targeting a specific type of error. In other words, instead of responding to a whole gamut of incorrect forms involving grammar, lexis, pronunciation or pragmatics simultaneously, teachers should be more selective within a single lesson, its phase or a specific activity. They could, for example, confine the treatment to errors to the use of the present perfect and present perfect continuous in one part of a lesson, react to problems in the employment of recently taught vocabulary in another, and focus on a recurrent pronunciation difficulty in its last segment. This recommendation is commendable mainly because it helps to channel learners' limited attentional resources to a specific rule or a limited set of items, with the effect that the form-meaning connections become more relevant to them, and they are much more likely to make internal comparisons and detect mismatches between their current capacities and the target language norm. This is perhaps the reason why it is focused rather than general correction that is something of a default option in the majority of experimental studies of oral and written corrective feedback (Sheen and Ellis 2011). It should also be noted that although the research syntheses and analyses undertaken by Russell and Spada (2006), and Mackey and Goo (2007), discussed in Sect. 2.4.2.4 of Chap. 2, did not provide evidence for the superiority of focused or unfocused correction, and neither did a study undertaken by Ellis et al. (2008).[30] Sheen et al. (2009) demonstrated that the former is far more effective and the positive findings of research into the effectiveness of different types of corrective feedback also speak for themselves.

In spite of all of these undeniable advantages of focused corrective feedback, a certain degree of caution should be exercised when it comes to its application and therefore a number of caveats are in order. For one thing, it goes without saying that the decision as to which linguistic features should primarily be addressed at the expense of others must be closely related to curricular choices, previous and future instructional targets, the goals of a particular lesson or the activity being performed, which testifies one more time to the interrelatedness of the pedagogical choices that are considered here as well as the factors influencing them. More

[30] It should be added that in the study carried out by Ellis et al. (2008), the distinction between focused and unfocused corrective feedback was not made sufficiently transparent, which may have affected its outcomes, a possibility recognized by the researchers themselves.

specifically, there has to be a good reason why the teacher decides to mainly respond to errors in the use of the passive voice throughout a lesson and by and large ignore others, such as the fact that the intention is to encourage its relatively spontaneous use in text-creation activities, focused communication tasks or writing assignments. The limited focus might also be the corollary of the fact that a review class is being conducted in which there is a need not only to create opportunities for the use of the targeted forms in meaningful communication, but also to consolidate their conscious understanding and thus proceduralize declarative knowledge through the performance of highly controlled exercises (e.g. sentence completion). Within one lesson, much also depends on whether accuracy-based or fluency-oriented work predominates in its given phase because focused correction is perhaps more likely to occur as well as to be more feasible in the former than in the latter. The reason for this is that a real or potential communication impasse can hardly be expected to take place when students are working on isolated sentences that are well-known to the teacher while it is bound to arise sooner or later when genuine messages are being conveyed, with the effect that some kind of intervention in the form of reactive negative evidence may prove to be indispensable.

This brings us to yet another crucial issue, namely the fact that, whatever the benefits of focused error correction, there will also be situations when unfocused feedback will be more appropriate. In the case of speaking, a good example could be a discussion about controversial issues brought up in a text the students have been requested to read or the reporting stage of a decision-making task. In the case of writing, such an approach could be adopted to an essay that is intended to hone the learners' writing skills as such rather than encourage the use of a specific linguistic feature. Here, the correction will in all likelihood be less frequent, but also more incidental and extensive, and the teacher may choose to react to a wide range of errors which he or she views as egregious, recurrent or simply important from a pedagogical point of view. A number of factors may influence the decision as to which errors should be treated and which should go uncorrected, both contextual (e.g. previous instruction), learner-related (e.g. learning style or personality), psycholinguistic (i.e. developmental stage), as well as linguistic (e.g. inherent characteristics of the form responsible for the error), with the last one being the most germane to the present discussion. As was pointed out earlier in the text, the linguistic dimension may be connected with the inclusion of the feature in the syllabus or its status in a lesson or a series of lessons, its perceived level of difficulty, its relationship to corresponding forms and meanings in the learner's L1 or other languages he or she may be familiar with, or its similarity to other language features that are on the pedagogic agenda of a given course. On top of this, there is empirical evidence showing that some linguistic items respond better to corrective feedback than others. Although such issues will be tackled in greater detail in Chap. 4, it is worth pointing out here that recasts may be more salient for phonology and lexis than for morphosyntactic items (e.g. Lyster 1998a; Carpenter et al. 2006; Han 2008), and their processing and effectiveness may differ depending on whether they are employed to target errors in the use of vocabulary and grammar (e.g. Egi 2007; Mackey and Goo 2007). In addition, while the nature of

a grammatical structure does not appear to impact the efficacy of recasts, it is of relevance in the case of metalinguistic feedback. What this goes to show is that virtually all the pedagogical choices in error correction that have been discussed thus far and the factors that have been shown to affect them are closely tied to the issue of how inaccurate forms in oral and written output are dealt with, or the type of feedback that teachers provide, a fundamental issue to which we now turn our attention.

3.5.4 How Should Learner Errors be Corrected?

The question concerning the manner in which learner errors in speaking or writing should be corrected, or the type of corrective feedback, has not only generated the most interest among theorists and researchers, but it can also be seen as having the greatest relevance to everyday teaching practice since it is often the most tangible aspect of the treatment of incorrect forms. As the foregoing discussion has demonstrated, the selection of the technique of correction does not take place in a vacuum as it is influenced by numerous variables listed in Fig. 3.2, such as those tied to the educational context, the objectives of the lesson, learner and teacher factors, student response to the corrective move, as well as learning outcomes. Obviously, the choice is also intricately interwoven with the other issues discussed by Hendrickson (1978) and dealt with in the present chapter since it should be clear by now that this decision hinges upon the production mode (i.e. oral vs. written), the type of activity in hand, the nature of the error, the timing of error treatment, and the source of the corrective feedback. On top of all of this, it is possible to classify the techniques of error correction in a multitude of ways and with different levels of detail, both of which may be reflective of the considerations just mentioned as well as the theoretical stance adopted by a particular writer, the aims and requirements of a specific study, or a given pedagogical perspective.

Given such complexity, it would clearly be unfeasible to describe in this section all the types of corrective feedback that teachers have at their disposal or all the interfaces of these with different factors impacting the occurrence of error correction, with the consequence that the focus here will only be on the most important divisions and the corrective moves that have received the most attention in the literature. In view of the far-reaching differences in this respect between correction in oral and written production, these two basic types of feedback will be discussed separately, with finer distinctions being made in each case. When it comes to the former, the main point of reference will be the differentiation between accuracy-based activities and fluency-oriented tasks (see Sect. 3.2 earlier in this chapter), with additional foci being concerned, among others, with the differences between implicit and explicit as well as input-providing and output-prompting instructional options, also with respect to the timing of correction. As to the latter, a key distinction will be drawn between direct and indirect error treatment, or input-providing and output-pushing techniques, and an attempt will be made to provide a brief

account of more integrated approaches to the treatment of written errors, such as the product and process paradigm (Polio and Williams 2010) or dynamic written corrective feedback (Evans et al. 2010). Although the primary focus of this section will be on the *type of corrective feedback*, references to the remaining options in error correction will also be made whenever deemed necessary or useful for better understanding of the issues under discussion.

3.5.4.1 Types of Oral Corrective Feedback

The distinction between accuracy-based and fluency-oriented activities which was elucidated in Sect. 3.2 plays a crucial role in the discussion of oral corrective feedback on account of the fact that the context in which error treatment takes place determines not only the type of linguistic knowledge that benefits from the pedagogic intervention, but also the choice of the most suitable techniques to be employed. As has been pointed out on several occasions in this book, when students are engaged in the performance of highly controlled text-manipulation activities, such as exercises involving completion, transformation or translation, which are the hallmark of the second stage of the PPP sequence and primarily serve the purpose of gaining greater control over explicit knowledge, it is best to provide feedback that is both *immediate* and *explicit* so that learners have the opportunity to test their hypotheses and enhance their understanding of the targeted feature. It can also be assumed that, given the pedagogic objectives of these activities, it is most beneficial to insist that the learners attempt to produce the correct version at some point, as only in this way can the teacher make sure that they have grasped the relevant rule.[31] This indicates that correction should in most cases be *output-prompting*, which of course does not exclude the possibility of falling back upon input-providing options which may prove to be useful or perhaps even necessary in some circumstances. For example, when a learner makes several errors in a single sentence and it is unfeasible to deal with all of them at equal length, the teacher may supply the correct version of the whole utterance but only require the repetition of the accurate form in the case of a language feature that he or she views as the most important from a pedagogic perspective (e.g. it is the focus of the activity in hand or has recently been taught) and should thus be given priority.

While these guidelines are rooted in the considerable experience of the present author as an English teacher and they also stem from the findings of his

[31] The author is fully aware that the production of the correct form following explicit correction cannot always be taken as evidence that the learner has indeed understood the rule underlying the application of a given structure. In fact, as language teachers would surely attest, it is not uncommon for learners to repeat something the teacher has said in a rather mechanical and mindless way, not only without grasping the rule but even without actually comprehending the utterance. Nonetheless, it is logical to assume that the requirement for the production of the TL feature, especially if it is the learner who has to work out the problem, is more likely to provide evidence that a particular rule has been understood than waiving such a requirement, let alone the fact that the need to repeat a specific linguistic form makes it more relevant to learners.

previous studies (e.g. Pawlak 2003, 2004b, 2010a), it should be pointed out at this juncture that explicit, output-prompting correction may not be the most preferred repair sequence in form-and-accuracy contexts, in particular when it involves direct and unmitigated negative evaluation of learners' erroneous utterances (cf. Seedhouse 1997a, b, 2004). As Seedhouse (2004, p. 163) comments, "(…) when learners supply a linguistically incorrect reply in response to a teacher initiation, the data show that direct, explicit, overt negative evaluation tends to be avoided, and 'IRF/IRE' is in no way an accurate description of the interactional sequence in these cases". Instead, teachers typically opt for providing corrective feedback in ways that obviate the need for the use of the words 'no' or 'wrong', such as indirect indication that there is a problem, repeating the original question or initiation, or accepting the deviant form and then supplying the correct version. Alternatively, they might moderate their unfavorable responses and overt criticism by using mitigating comments or modifying the sequence of the interaction in such a way that direct negative evaluation occurs in a subsequent turn.[32] Still, as Seedhouse (2004) himself admits, such practices, which reflect to a large extent the recommendations deriving from the current communicative approaches, in fact make errors seem to be more important, problematic and embarrassing than they would be if the corrective reactions were bald, direct and unmitigated. Even though reliance on one type of feedback or another is heavily context-dependent and hinges on a number of factors, it would appear then that immediate, direct and output-inducing correction is likely to be most beneficial in accuracy-based activities.

Moving on to specific types of CF that can be employed in reaction to inaccurate forms which come up in the course of controlled exercises, a useful distinction can be made between *showing to the learner that an error has occurred* and *providing the correct version* (cf. Komorowska 2003; Harmer 2007b). The obvious rationale behind the former is to involve the learner in the process of fixing the inaccurate utterance and it is predicated on the logical assumption that he or she should be familiar with the relevant rule, perhaps because it has been the focus of recent pedagogic intervention or should simply be known at a particular level of proficiency. In order to achieve this goal, the teacher may resort to a variety of verbal techniques such as (Bartram and Walton 1991; Komorowska 2003; Harmer 2007b):

(1) *asking the learner to repeat the utterance* by saying 'Once again?', 'Sorry?', or 'Could you repeat?' in response to an utterance such as *'She is walk in the

[32] In fact, Seedhouse (2004) lists many other ways in which direct negative evaluation can be avoided, illustrating each of them with instructive excerpts of classroom interaction, accompanied by insightful comments. It should be noted, though, that the present author found many instances of direct negative evaluation in the recordings and transcripts of naturally occurring classroom discourse made for the purposes of his own research projects (cf. Pawlak 2003, 2004b), which might indicate that the ways in which repair is conducted may be a function of a specific instructional setting as well as the beliefs, preferences and characteristics of the participants of classroom interaction, teachers and learners alike.

park with a dog',[33] perhaps additionally emphasizing the problem with the use of intonation;

(2) *posing a query about the content of the erroneous sentence*, which requires a response with the use of the problematic targeted language form, as in: L: *'She buy a new coat last week'—T: 'What did she buy?';

(3) *pretending to misunderstand*, in which case the teacher feigns lack of comprehension of an erroneous utterance, as exemplified by the following exchange: L: *'She went to the hairdresser's and had his hair cut'—T: 'She cut the hairdresser's hair??? How is it possible?'; according to Bartram and Walton (1991), a corrective reaction of this kind is advantageous as it is devoid of criticism, it injects a dose of humor into monotonous code-focused activities, and it resembles what happens in out-of-class situations;

(4) *echoing*, or *repeating what the learner has said* with emphasis through added stress and questioning intonation on the erroneous part, as in *'My uncle FLY to Paris last week?' or 'London is famous WITH Buckingham Palace?', which has the advantage of precisely pinpointing the incorrect form; Bartram and Walton (1991, p. 51) mention the potential drawbacks of this technique, such as the danger that the corrective move may be viewed as an attempt to make fun of the learner who has committed the error, the fact that such a reaction may be misinterpreted as a question expressing doubt about the content of what has been said rather than correction, or the failure to provide exact guidance on what has gone wrong; these concerns, however, seem to be overstated in light of the fact that students expect to be corrected in accuracy-oriented activities, the very focus of these activities dictates that learners will typically have no difficulty in identifying teacher intention, and skillful use of stress and intonation ensure that the nature of the problem is sufficiently highlighted;

(5) *repeating the utterance up to the last correct word*, which is uttered with hesitant and rising intonation, as in the following exchange: L: *'I have the bigger house in town'—T: 'I have the …?', and which also enables the teacher to unambiguously indentify the location of the error;

(6) *statement and question*, in which case the teacher chooses to comment on the incorrect utterance making it clear that a linguistic problem has occurred, as in: 'Good try, but there is a little problem in this sentence', or asks the learner who has made the error or other students whether or not a specific TL form is accurate, as in: 'Are you sure this is OK?' or 'Do people think it is correct?'; obviously, in both cases, it is possible to resort to the use of metalinguistic information such as, for example: 'But this is the superlative, not the comparative form. How should you say it then?'; it should also be added that such comments and questions can be formulated in the target language or

[33] Following the generally accepted convention, an asterisk is employed here and elsewhere in the text to indicate a sentence or utterance that is considered inaccurate or inappropriate, as it violates, in part or in its entirety, native speaker norms (see Sect. 1.2 in Chap. 1 for the definition of error which has been adopted for the purposes of the present work).

the mother tongue, with the latter option perhaps being predominant in the majority of foreign language classrooms where students share the L1 with the teacher;

(7) *hinting*, which, according to Harmer (2007b, p. 144), is "a quick way of helping students to activate rules they already know but which they have temporarily 'mislaid' (…)"; this involves responding to inaccurate forms with quiet, typically metalinguistic hints, such as 'Tense' to indicate, for example, that the past continuous rather than the past simple should be used, 'Third person' to inform the learner that he has dropped the '-s' ending, or 'It's a question' to signal that the word order has to be modified or the right auxiliary verb should be employed; this procedure is based on the belief that the error is the result of haste, stress, tiredness or insufficient attentional resources rather than ignorance of rules (i.e. what Corder (1967) calls a mistake; see Sect. 1.2 in Chap. 1) and the conviction that the learner is acquainted with the requisite metalanguage;

(8) *providing learners with a choice of several target language options*, one of which fits a specific context, in the hope that they will be able to recognize and select the correct form, as in: L: *'Last Tuesday I get up late'—T: 'get – got – have got', or L: *'Mary lives in this house for five years'—T: 'lives – was living – has been living'; this technique seems particularly suitable in the case of less proficient learners who may find it difficult to produce the required TL feature on their own;

(9) *reformulation*, which is usually referred to as *recasting* when discussed in the context of fluency-oriented tasks (see the discussion below), where the teacher repeats what the student has said, eliminating all the errors that may have been committed but at the same time avoiding direct reference to the fact that incorrect language forms have been produced, as is visible in the following exchange: L: *'She apologized me about what she said me and started to cry'—T: 'OK, so she apologized to you for what she had done and started to cry. And what happened after that?'; although this technique is similar in many respects to echoing, methodologists tend to regard it as particularly beneficial; this is clearly evident in Bartram and Walton's (1991, p. 54) pronouncement that "[r]eformulation provides a way in which teachers can react to a mistake without direct correction. In this way teachers maintain their professional position in the eyes of students and also increase the flexibility of their response to mistakes. (…) Reformulation might be seen as a discriminating response to mistakes, rather than either ignoring, or blindly correcting them", as well as Harmer's (2007, p. 145) comment that "[i]t does not put the student under pressure, but clearly points the way to future correctness. Its chief attribute (…) is its unobtrusiveness"; despite such positive evaluations, doubts arise as to learners' ability to interpret the corrective feedback in the right way because the reformulation may be seen merely as a commentary on the previous utterance, a danger that Bartram and Walton (1991) themselves emphasize with reference to echoing (see point 4 above); it is also not clear why unobtrusiveness should be of major concern in activities which are intended to openly draw learners' attention to specific linguistic features.

In addition to all of these techniques, incorrectness can also be indicated in non-verbal ways, which may entail the use of various gestures (e.g. a wave of a finger), facial expressions (e.g. frowning) as well special sounds (e.g. 'Mmmmmmh' uttered with doubtful intonation). Such devices can simply be applied with the purpose of communicating to the learner that what he or she has said is incorrect in one way or another, as when the teacher holds out an open hand with the palm down and a rotating wrist, raises a hand with the forefinger extended, shakes his or her head, or just produces a doubtful facial expression (cf. Bartram and Walton 1991; Komorowska 2003; Harmer 2007b). However, gestures and expressions can also be employed to perform more specific functions when providing feedback such as informing the learner about the location and nature of the error. Bartram and Walton (1991), for example, describe the *finger technique*, in which each word of a sentence is represented with the fingers of one hand, whereas the forefinger of the other hand is used to tap or hold the finger standing for the wrong or missing word. They also provide examples of such gestures as the over-the-shoulder hand or thumb movement to indicate the past time, stretching out a hand and pointing into the distance ahead to signal the need for the use of the future tense, or bringing together the forefinger and the thumb to encourage greater reliance on contractions or linking. According to Komorowska (2003), the advantage of using expressions and gestures is that in addition to alerting students to the occurrence, location and nature of the error, it also serves the purpose of reducing teacher talking time, providing learners with additional opportunities to speak, as well as developing their capacity for analysis and independent decision-making. At the same time, however, the application of non-verbal techniques brings with it the risk of embarrassing or even humiliating the learner if the wrong gesture or expression is used, or if it is interpreted as a sign of mockery, which means that this should be done with extreme care and tact. Another problem is related to the fact that non-verbal expressions can easily cause misunderstanding or even confusion, with the effect that it is imperative to acquaint students with such techniques at the beginning of the course and that it might be indispensable to supplement them with verbal reactions in some cases.

Although an attempt has been made above to point to the merits and demerits of some of the ways in which incorrectness can be shown, it should be made clear that none of these techniques are inherently good or bad because their utility depends on a particular situation, the characteristics of the learner and the language feature in question, and, more often than not, skillfully combining some of them may prove the most propitious option. For example, asking a question about the content of the utterance or pretending to misunderstand is more likely to lead to self-correction in the case of a structure that has recently been taught or is the main focus of the task in hand than such that was introduced a while ago or is just one among many features addressed in an exercise given to students as part of a review class. Similarly, while a more proficient learner who misuses a specific target language form due to limited attentional resources may immediately catch on to the problem and attempt to fix it in response to a hint or some variant of echoing, a less advanced one may require a more direct indication that something

has gone awry, a direct reference to the requisite rule or even the presentation of several options to choose from. Finally, a statement that is sufficient to inform the learner about the need to use the comparative or superlative form of an adjective might be patently inadequate when the error involves past counterfactual conditionals or modal verbs in the past.

A question also arises about the value of more implicit, largely comprehension-based corrective moves such as reformulation, the use of which is lauded by methodologists but at the same time violates the principles laid out at the beginning of this section. While it would surely be overly dogmatic to say that it has no place in accuracy-based activities, as it can be useful in drawing learners' attention to linguistic features that are not the main concern of an exercise, one may contest the rationale for such indirect correction in the case of the language forms that are currently in pedagogic focus, all the more so that it by and large obviates the need for these forms to be integrated into learners' output. This is because such circumstances can hardly be viewed as conducive to the development, refinement and proceduralization of initial explicit knowledge, let alone the fact that it would be blatantly unnatural to respond to errors in this way. After all, when learners are working on a grammar exercise, they typically want to be told right away whether they have used the targeted feature correctly rather than have to guess whether the teacher's response constitutes corrective feedback or a confirmation of the utterance they have produced. In view of such considerations, it is obvious that in many cases, teachers will be forced to rely on a combination of different ways of indicating the occurrence, location and nature of an error, which might involve using a facial expression, followed by echoing, the provision of a hint of some kind, and, perhaps, reformulation.

As most practitioners would no doubt attest, there are frequent situations in the language classroom in which showing incorrectness proves to be futile, irrespective of which technique or combination of techniques is employed, because the learner is not able to correct the error by himself or herself, or simply remains oblivious to the occurrence and nature of the problem. What is more, it would clearly be unfeasible to encourage self-correction in response to every incorrect utterance in classroom discourse due to considerable time constraints and the related need to weigh the potential benefits of learner engagement in the process of correction against the necessity of achieving the goals envisaged for a given lesson. Needless to say, not only does making learners cognizant of the existence and nature of the problem inevitably have to take time, but there is no guarantee as well that they will be capable of successfully dealing with the problem, with teachers usually knowing full well that some students simply cannot be expected to rise to the challenge. In such cases, it is necessary to intervene and sort things out or involve other learners in the process of correction, with the latter option being ignored here on account of the fact that it will be dealt with at greater length in Sect. 3.5.5.

Direct teacher intervention can also take a number of forms, the most common of which would be perhaps to repeat the entire utterance, first emphasizing the corrected part and then doing so normally, as in: L: *'She has bought a new

car last year'—T: 'She BOUGHT a new car. She bought a new car last year', or just the incorrect part, probably first contradicting what the learner has said, as in: L: *'She must to work very hard'—T: 'We do not say *must to work*. We say *must work*'. This will in all likelihood be followed by asking the student and, when the error is an egregious, persistent or recurrent one, also the whole class to repeat the correct version. In such cases, especially when the form has recently been the subject of FFI or is viewed as critical, the teacher can embark on a more elaborate grammatical explanation, comment on the use of a lexical item or highlight a pronunciation contrast, which might entail the use of metalanguage as well as reliance on the TL or the learners' mother tongue. In theory, it is also possible to defer the treatment until the end of the class, a practice that would be highly unnatural, though, in situations when learners are bound to be aware of the pedagogic focus of the activities performed (see Sect. 3.5.2 for the discussion of the issue of timing).

The repertoire of the possible corrective reactions appears to be much wider in the case of CF provided in fluency-oriented tasks, which, as will be recalled from Sect. 3.2, can take the form of text-creation activities or focused and unfocused communication tasks, and can contribute to the development of both explicit, declarative knowledge and implicit, procedural knowledge. One approach to the occurrence of inaccurate forms during message conveyance, such that is in fact favored by the majority of methodologists, is to confine error treatment to situations where the production of incorrect language may place in jeopardy the successful flow of communication. Edge (1989, p. 37) comments, for example, that "[s]tudents need the experience of uninterrupted, meaningful communication if they are to learn to use the language", adding as well that "[m]aking mistakes in language use is not only normal, but necessary to language learning". Similar sentiments are expressed by Hedge (2000, p. 291), who writes that "(…) many handbooks for teachers stress the importance of not impeding learners' attempts to communicate during fluency activities", and Harmer (2007b, p. 145), who points out that "(…) if communication breaks down completely during a fluency activity, we may well have to intervene. If our students can't think of what to say, we may want to prompt them forward. If this is just the right moment to point out a language feature, we may offer a form of correction". The technique that is recommended for tackling such communicative impasses is what Harmer (2007b, p. 147) refers to as *gentle correction*, defined as the provision of CF in a way that is unobtrusive, does not interfere with getting the messages across and does not undermine the overall meaning-oriented nature of the activity. He goes on to explain that this goal can be achieved through the use of some version of reformulation or echoing, making a mild suggestion or even offering a brief comment concerning the accuracy of what has been said. In other words, what he proposes is reliance on some kind of focus on form (cf. Long 1991) as well as the application of some of the corrective options that will be elaborated on later in the present section, such as recasting or prompting, with the important caveat that their utilization is confined to negotiation of meaning rather than form, or at most the conversational rather than the didactic variant of focus on form (cf. Ellis,

Basturkmen and Loewen 2002; see Sect. 1.6.1 in Chap. 1 for a discussion of these key distinctions).[34]

When a communication breakdown is not imminent and there is thus no urgent need to respond to the error, however, a recommendation is commonly made that the teacher should delay or postpone the provision of feedback until later in the lesson, in most cases until after the completion of the communication-oriented task or activity. Clearly, for such correction to be relevant, sensitive to learners' needs and therefore effective, it is necessary to come up with a reliable record of the most important, persistent or serious inaccuracies in some way. This obviously necessitates closely monitoring classroom discourse, whether it is based on a whole-class discussion, a decision-making task performed in pairs or small groups, or short speeches delivered by individual learners, and might take the form of simply jotting down the errors, either by grouping them into types (e.g. grammar, lexis, pronunciation, appropriacy), having separate cards for all the students, or just making a note of key problems shared by many learners and related to recent teaching points (Bartram and Walton 1991; Hedge 2000; Thornbury 2005; Harmer 2007b). Such notes can later provide a basis for a feedback session in which some of the errors are brought to the attention of the class, discussed and explained (e.g. by being put up on the board or displayed on a screen by means of a digital projector). More individualized feedback can also be offered, as when learners are informed about the most egregious problems in their output (e.g. by being provided with cards containing the teacher's notes) and encouraged to find solutions to them.

Alternatively, teachers might elect to record students' performance using a digital voice recorder, or basic computer software, with such recordings and transcripts made on their basis constituting excellent material for subsequent analysis and improvement. One possibility would be to have students listen to their own or their peers' interactions and assign them the task of pinpointing and correcting errors. Activities of this kind can be performed in groups, in which case individual learners can be made responsible for focusing on a preselected aspect of spoken language, an approach that is likely to develop students' ability to monitor their speech and may in fact contribute to greater skill in noticing and responding to the corrective feedback provided by the teacher in real time. Learners can also be requested to analyze transcripts supplied by the teacher paying special attention to inaccuracies in their output, but they can be asked as well to make transcripts of audio-recordings themselves, which, as Lynch (2007) or Mennim (2012) demonstrate, can provide a stimulus for the negotiation of TL form. It must be

[34] It is also possible to talk about *negotiation of content* in some cases, which differs from negotiation of meaning since it does not constitute a side-sequence to the main flow of conversation and it is more concerned with the factual precision of what is being said rather than comprehensibility (cf. Rulon and McCreary 1986). Even though there might be an overlap between this type of negotiated interaction and negotiation of form and meaning on some occasions, such cases will not be considered as they fall outside the scope of this work.

pointed out, though, that coming up with a written version of spoken interaction is extremely time-consuming, which makes frequent use of such activities rather impracticable (cf. Hedge 2000; Thornbury 2005; Harmer 2007b).

There are undeniable merits to the provision of delayed corrective feedback in fluency-oriented tasks, the most important of which is the contribution it can make to the development of learners' monitoring, noticing and metacognitive skills, and many of the techniques listed above can without doubt come in handy during some lessons and activities, often as a useful addition to other corrective reactions. Nonetheless, the primary concern of the present section is error treatment that immediately follows the production of an inaccurate form, which is in line with the theoretical positions outlined in Sect. 2.4.1 of Chap. 2 and is reflective of the main focus of most empirical investigations into the provision of oral CF, the results of which are reviewed in Sect. 4.3 of Chap. 4. It should also be emphasized that the present considerations are predicated on the assumption that such instantaneous correction should by no means only be restricted to situations in which the violation of rules of usage or use triggers a communication breakdown, but, rather, that on many occasions it can constitute a valuable instructional option in its own right. It can thus be employed on a much larger scale in teaching TL features, as long as it takes heed of the broader pedagogical agenda (i.e. curricular goals, lesson objectives, etc.; see Sect. 3.4) and it complies with a set of key principles that will be described at the end of this section. Once again, the rationale for such *didactic* rather than only *conversational focus on form*, or *negotiation of form*[35] rather than solely *negotiation of meaning*, whether it happens to be planned and intensive or incidental and extensive (see Sect. 1.6.1 in Chap. 1), derives from the theories and hypotheses underpinning the provision of corrective feedback as well as from the findings of research into the effects of different types of oral correction. In fact, the validity of such a more comprehensive, inclusive and perhaps also teacher-friendly stance on the role of oral CF is recognized, albeit somewhat meekly and tentatively, by some methodologists. This is evident in Ur's (1996, p. 247) cautionary pronouncement that "[t]he recommendation not to correct a learner during fluent speech is in principle a valid one, but perhaps an over-simplification. There can be places where to refrain from providing an acceptable form where the speaker is obviously uneasy or 'floundering' can actually be demoralizing, and gentle, supportive intervention can help". While the possible interpretations of the word 'gentle' can vary, it can be assumed that it is applicable to different ways of supplying oral feedback, or conducting reactive focus on form, that are discussed in contemporary publications devoted to the topic of error correction in the course of fluency-oriented, communication-driven tasks.

[35] It should be noted that the term *negotiation of form* is used here, as it in fact was in Sect. 1.6.1 of Chap. 1, to refer to the provision of error correction in general. This stands in contrast to its more narrow interpretation later in this section where it is employed to denote different types of prompts, as examples of output-prompting corrective feedback, and contrasted with recasts, as manifestations of input-providing error correction.

It is perhaps fitting to begin this overview of the feedback strategies that can be applied in meaning-focused interactions with a brief discussion of the main categories that have been discerned and investigated in a series of studies conducted by Lyster and his associates in the context of French immersion (e.g. Lyster and Ranta 1997; Lyster 1998a, b), but which are relevant as well to other instructional settings on condition that they create at least some opportunities for the occurrence of meaningful communication (e.g. a conversation with the teacher, a discussion of a text or topic, or the completion of a communication task in pairs or groups). These feedback moves, or what Ellis (2008, p. 226) labels *negotiation strategies*, are the following (Lyster and Ranta 1997; Lyster 1998b; Lightbown and Spada 2001; Ellis 2008):

(1) *explicit correction*, which is *direct* and *overt* in the sense that the teacher supplies the learner with the correct form and makes it clear to him or her, and typically also to the other class members, that an error has been committed, as is evident in the following exchange: L: *'He started run but the dog was too fast'—T: 'He started TO RUN but the dog was too fast. Remember that you need the full infinitive here. Can you repeat please?'; obviously, it would not be uncommon for the teacher to use the learner's first language to comment on the error or to request the repetition of the correct version;

(2) *recasts*, in which the teacher engages in *implicit reformulation* of the whole or only a part of the learner's utterance but preserves its intended meaning (see the technique of reformulation discussed with respect to accuracy-based activities); this is visible in the following example: L: *'She live in this house since a long time and really loves it'—T: 'OK, she has been living in this house for a long time and loves it. But is it true that she only has positive memories connected with this place?'; recasts can be further subdivided into more specific categories, with some taxonomies and coding schemes being so detailed and meticulous, however, that their appropriate application is likely to pose a formidable challenge for researchers; the minute distinctions they include are also surely beyond the grasp of the classroom teacher and they cannot possibly serve as a basis for feasible pedagogic recommendations (see sect. 4.3.2.2 in Chap. 4 for examples of different types of recasts); suffice it to say here that recasts can constitute *the only corrective move* in a teacher turn or can also be *accompanied by other types of feedback*, and they might differ in relation to their *mode and intonation* (i.e. declarative vs. interrogative), *scope* (i.e. inclusion of new information), *reduction* (i.e. repetition of the entire or part of an utterance), *length* (i.e. the number of words), *the number of changes* (i.e. one vs. multiple), *the type of change* (e.g. substitution), *linguistic focus* (e.g. grammar) and *directness* (i.e. whether the learner is the addressee or merely a bystander) (Lyster 1998a; Sheen 2006; Egi 2007; Bao et al. 2011).

(3) *elicitation*, in which the teacher overtly asks the student to reformulate the erroneous utterance and thus self-correct, which can be accomplished in different ways, such as: (a) by *asking a question* after an error has occurred, as in: L: *'He fly to Egypt in July'—T: 'How do you say *poleciał* [flew] in

English?' (in fact, the whole query could be encoded in the learner's L1), (b) by *eliciting completion* of his or her own utterance, as in: L: *'I would do it if I you'—T: 'I wouldn't do it if I…', and (c) by *asking students to reformulate the utterance*, as in: L: *'My mother is more taller than her sister'—T: 'Can you try to say this in a different way?' or 'Once again'; it is also possible to resort to some of the techniques of showing incorrectness discussed above with respect to error correction in accuracy-based activities, such as asking a query about the content of the utterance or pretending to misunderstand, as long as they do not hamper the flow of communication and are not overly disruptive in a particular context;

(4) *metalinguistic feedback*, where the teacher promotes self-correction by falling back on specialist terminology to direct the learner's attention to the well-formedness of his or her output as well as to inform him or her about the existence, location or nature of the error; feedback of this kind can take the form of a rather *general comment*, as in: L: *'He is believe that he get a job'—T: 'There are two problems with this sentence, can you see them?', more specific *metalinguistic information*, as in L: *'New York is famous from the Statue of Liberty'—T: 'We need another preposition following the adjective', or *elicitation of the requisite rule or explanation*, as in L: *'I will lend some money from my brother if I have to'—T: 'What is the difference between *lend* and *borrow*? Do you remember?'; it should be noted that reliance on learners' L1 is likely in monolingual classrooms, especially with students representing lower levels;

(5) *clarification requests*, in which case the student is required to repeat or reformulate his or her utterance in response to an indication that it has been misunderstood or may be problematic in some ways; this type of CF may involve the use of such phrases as: 'I beg your pardon?', 'What?', 'What do you mean?', 'Sorry', 'Excuse me?', or 'What do you mean by saying…?'; error correction of this kind may thus be illustrated by the following exchange: L: *'I eat fish on dinner yesterday'—T: 'I beg your pardon?'—L: 'Fish. I eat fishes… I ate fish'; needless to say, a number of conditions have to be satisfied for a clarification request to bring about such instantly positive effects in the form of repair (e.g. the learner's familiarity with the irregular past tense form, the availability of attentional resources, etc.), with the effect that the corrective sequence is likely to be much less smooth in real classroom discourse;

(6) *repetition*, where the teacher repeats the erroneous utterance or the part of it containing the error, additionally highlighting the inaccurate form with adjusted, usually rising, intonation, as in the following exchange: L: *'There is a cat and two mouse in the picture'—T: 'Two mouse?'; a contentious issue is whether *repetition* as corrective feedback strategy should be considered separately from what is called a *confirmation check*, or a speaker's query as to whether his or her understanding of the interlocutor's message is correct (Long 1983), as illustrated in the following exchange taken from Young and Doughty (1987): NNS: *'Mexican food have a lot of ulcers'—NS: 'Mexicans

have a lot of ulcers?'; while this is the position adopted by Ellis (2008), in all likelihood on the grounds that a confirmation check is primarily a device used to initiate negotiation of meaning and, in contrast to repetition, it can at best be used as a technique of conversational rather than didactic focus on form; he also includes it in the category of input-providing options, viewing repetition as an output-prompting negotiation strategy[36]; the fact is, however, that although repetitions and confirmation checks might indeed differ to some extent in their form (i.e. the former usually entails verbatim reproduction of the incorrect form whereas the latter may involve some kind of reformulation) and they might at times place disparate demands on the learner (i.e. the requirement for pushed output versus no such requirement), thus offering different kinds of learning opportunities, such divergences are not mandatory, with the outcome that these corrective moves are often likely to be indistinguishable; for this reason, confirmation checks are assumed to represent a subcategory of repetition, an approach that has been adopted, for example, in the study carried out by Oliver (1997).[37]

The six categories of feedback moves differ considerably, particularly when it comes to the level of directness or explicitness of the corrective reaction, they provide different types of information to learners' processing mechanisms in the form of positive or negative evidence (see Sect. 2.2 in Chap. 2), and they aim to bring about different kinds of responses. Therefore, Lyster and Ranta (1997) introduce an additional category labeled *negotiation of form*, which comprises the techniques of elicitation, metalinguistic feedback, clarification requests and repetition (or confirmation checks), and is contrasted with explicit correction and recasting. The reason for such a differentiation is related to the fact that the four types of feedback perform an unambiguously didactic function, serve the purpose of involving learners in the process of correction, and ensure that some kind of uptake (i.e. the move undertaken by the learner after receiving feedback) will be attempted, whether or not the repair (i.e. self-correction) turns out to be successful. Therefore, they are believed to supply mainly negative evidence, unless, of course, the correct version is provided in the face of the learner's inability to rectify the problem. By contrast, the use of explicit correction or recasts may, but does not have to, lead to the incorporation of the correct form provided by the

[36] In fact, Ellis (2008) is more concerned about problems involved in making a distinction between *confirmation checks*, which are devices employed in negotiating meaning, and *recasts*, which are by and large corrective moves. This only demonstrates how difficult it is to tease apart the different types of corrective feedback as they occur in the course of meaning and message conveyance, even though such judgments are made *a posteriori* on the basis of transcripts as well as audio or video recordings. If such difficulties are encountered by researchers, it is easy to imagine the magnitude of problems that practitioners have to face when making decisions about error correction on the spur of the moment, but also the difficulties related to making sound pedagogical recommendations in this area.

[37] Oliver (1997) sidestepped the difficulty involved in interpreting negotiating strategies of this kind by double coding confirmation checks and what she refers to as *other repetitions*.

teacher, either because the learner is too preoccupied with efforts to communicate, the working memory capacity is too limited to allow monitoring and noticing, let alone output modifications, or the CF move is taken to function as a comment on or a confirmation of what has been said rather than an indication of an error. In consequence, these two types of corrective feedback provide both positive and negative evidence, on condition that evidence of this kind is in fact attended to and interpreted in the right way.

Basing on the analysis of their empirical data, which showed that recasts were the most frequent in classroom discourse but also the least likely to generate learner uptake, Lyster and Ranta (1997, p. 42) comment that negotiation of form is characterized by "(…) the provision of corrective feedback that encourages self-repair involving accuracy and precision and not merely comprehensibility". A similar evaluation can be found in Majer (2008, p. 83), who, upon a review of the relevant literature, points out that negotiation of form:

(1) involves a more didactic and less conversational type of repair (Braidi 2002);
(2) encourages learner participation in classroom interaction (Nobuyoshi and Ellis 1993);
(3) fosters student-generated repair in the form of self-correction (Braidi 2002) as well as peer-correction (Tseng 2004);
(4) tends to be more effective in generating uptake than explicit correction or recasting (Tseng 2004).

While such comments are justified and there are indeed good reasons for singling out the category of negotiation of form, several qualifications are in order. In the first place, the types of feedback included in this group differ with respect to their explicitness and their characteristics may be subject to change depending on how they are realized in various situations, which clearly has a bearing on their potential to elicit output modification. It seems obvious, for example, that a clarification request, which is commonly utilized to initiate a negotiated sequence to clear up a genuine misunderstanding and can thus be regarded as relatively implicit and unobtrusive, is less likely to result in an attempt at self-correction than a metalinguistic clue, which is entirely explicit and makes the teacher's didactic intent transparent to the learner. Similarly, the effectiveness of a repetition in bringing about uptake is bound to vary depending on what exactly gets repeated, what kind of intonation is used, and whether some kind of adjustment is included in the corrective move, as might be the case with confirmation checks. Secondly, on some occasions there is a disquieting lack of consensus with respect to the distinctive features of specific types of CF and the demands they place on learners, a good case in point being explicit correction, which Lyster and Ranta (1998) appear to see as primarily input-providing, while Ellis (2008) considers it to be unequivocally output-inducing. Finally, there are numerous situations in the language classroom in which it might be extremely difficult to tease apart various type of feedback for the simple reason that when one corrective move does not work, as when the learner is unable to self-repair in response to a clarification request, the teacher will in many cases fall back upon some kind of alternative,

such as explicit correction, a point that will be revisited towards the end of the present section.

Given such problems, it should hardly come as a surprise that theorists and researchers have sought to come up with alternative divisions of the corrective moves that can be drawn upon in the course of meaning-focused communication, such that would be less ambiguous, less problematic to operationalize for empirical purposes, and perhaps also more amenable to being translated into concrete classroom recommendations. In consequence, the most weight is currently given to the distinctions between *explicit* and *implicit* corrective feedback, on the one hand, and *input-providing* and *output-prompting* corrective feedback, on the other, with scholars being divided as to which of these dichotomies is more relevant and thus holds more potential for research and pedagogy. As regards the first of these distinctions, it was elucidated in detail when illuminating the role accorded to correction in different frameworks of FFI in Sect. 1.6 of Chap. 1, but, for the sake of clarity, it is warranted to provide here a brief and simple quote from Ellis (2007, p. 339), who writes: "In the case of implicit feedback there is no overt indicator that an error has been committed, whereas in explicit feedback there is". Adopting the criteria that Ellis (2008, pp. 227–228) applies in his subsequent publication, the former includes recasts, clarification requests and repetitions (including confirmation checks), while the latter can take the form of explicit correction, elicitation and metalinguistic clues. As the preceding discussion has aptly demonstrated, however, each of these strategies has several variants, which clearly has far-reaching ramifications for the level of their explicitness and implicitness, in the sense that some realizations are bound to be more or less overt or covert indications that an error has been made. Even though this problem is partly ameliorated by the fact that implicit feedback has typically been operationalized in research as recasts, Ellis, Loewen and Erlam (2006, p. 348) make the valid point that "(…) the recasts used in the different studies might not have been equivalent in their degree of implicitness versus explicitness". There has been even more variation with respect to explicit correction which has been defined as overt indication of error (i.e. some form of elicitation), the provision of the correct form (i.e. explicit correction), the inclusion of more or less specific metalinguistic information, or some kind of combination of the three strategies (cf. Ellis et al. 2006; Ellis 2007, 2008; Sheen 2010a, b, c; Sheen and Ellis 2011).[38]

Specialists such as Lyster (1998a, 2004) are of the opinion that rather than exerting so much effort to determine the effects of the degree of explicitness, it

[38] Sheen and Ellis (2011, p. 594) also add *didactic recasts* to the category of explicit corrective feedback, which are defined as reformulations of learner utterances, even though the error has not impeded communication. This decision, however, does not seem to be warranted, not only because it stands in contrast to the ways in which explicit and implicit feedback are operationalized in most studies, but also because recasts, even those which are corrective and more overt, are very different from a purely pedagogic point of view from the other types of feedback typically considered to be direct or explicit.

makes more sense to investigate the relative contributions of *input-providing* and *output-pushing* error correction. The former supplies the learner with both positive and negative evidence, of course on condition that the corrective intent of the teacher's response is recognized, it does not require undertaking repair of the incorrect utterance, and might even make it more difficult (e.g. when a follow-up question is asked), although it clearly does not preclude it. As to the latter, it clearly constitutes negative evidence since not only does it unambiguously signal to the learner that what has been said is incorrect, but also places on him or her the onus to fix the problem, which inevitably calls for an attempt at uptake and repair. Input-providing feedback has typically been equated with the provision of recasts[39] and this is how it has been operationalized in most empirical studies, whereas output-pushing error treatment has mainly been associated with what has been referred to above as *negotiation of form*. Thus, it is seen as encompassing the application of clarifications requests, repetitions, metalinguistic clues and elicitation, with these four corrective strategies jointly coming under the name of *prompts* (cf. Lyster 2002, 2004; Ammar and Spada 2006; Lyster and Izquierdo 2009). Echoing but also elaborating upon the arguments provided by Lyster and Ranta (1997), Lyster (2004, p. 405) offers the following characterization of these corrective techniques:

> Although these four prompting moves, used separately or in combination, represent a wide range of feedback types, they have one crucial feature in common: They withhold correct forms (and other signs of approval) and instead offer learners an opportunity to self-repair by generating their own modified response. This approach resembles the 'clueing' procedure or 'withholding phenomenon' indentified by McHoul (1990) in his study of feedback in subject matter classrooms. In contrast, recasts provide learners with correct target forms, which frequently co-occur with signs of approval.

As Lyster (2004) himself admits at the beginning of this quotation and as has been pointed out earlier in this section, clarifications requests, repetitions, metalinguistic clues and elicitations all have their distinctive characteristics and they might in fact represent quite a mixed bag. To be more precise, they vary widely in the level of directness with which the necessity of output modification is communicated, and their efficacy in eliciting uptake and repair is a function of the way in which each of them is implemented in terms of the intonational focus, the amount and specificity of information provided, teachers' insistence on getting the learner involved, etc. One might also begin to ponder whether error correction necessarily

[39] Ellis (2008) also includes in this category confirmation checks, whereas Lyster and Ranta (1997) and Sheen and Ellis (2011) add to it explicit correction, or the provision of the correct form, whether or not it is accompanied by some kind of metalinguistic explanation. While the first solution has its merits, as the interpretation of a confirmation check might indeed hinge upon a specific context, the other is hardly warranted in view of the fact that when the teacher supplies the accurate version, he or she typically expects the student to incorporate it in a subsequent turn by, for example, repeating the amended version of the initial utterance. Besides, in his earlier publication, Ellis (2008, p. 228) himself classifies explicit correction as an output-pushing type of feedback.

has to be considered along two separate dimensions, namely implicit vs. explicit and input-providing vs. output-pushing, in view of the fact that the majority of feedback moves usually share the same two features, as is clearly the case, for instance, with recasting (i.e. implicit and input-providing), elicitation (i.e. explicit and output-pushing) or metalinguistic information (explicit and output-pushing). All of this seems to indicate that researchers should shun making blanket statements about the value of the whole category of prompts and teachers should be cognizant of their limitations as well as circumspect about their indiscriminate use in classroom interaction.

Although the effectiveness of different types of feedback which transpires in the course of fluency-oriented activities remains an empirical question and, therefore, it will be tackled in Chap. 4 devoted to the discussion of the main findings of research on error correction, a few comments are in order at this juncture on the pedagogical value of such instructional options. When making such an evaluation, it would be easy to succumb to the temptation to suggest, which would incidentally be in line with the results of most studies conducted in this area (see Ellis 2008; Lyster and Saito 2010; Sheen 2010a, b; Sheen and Ellis 2011), that the most efficacious feedback moves are those which are: (1) more explicit, and (2) require that the learner engage in some kind of modification of the erroneous utterances to eliminate the problem. Such a stance would also be firmly grounded in many of the theoretical positions outlined in Chap. 2, such as the Noticing Hypothesis (Schmidt 1990, 2001), the Output Hypothesis (Swain 1985, 1995), Sociocultural Theory (Lantolf 2006) or Relevance Theory (Niżegorodcew 2007), to name but a few.

On careful consideration, however, it becomes clear that this recommendation would be not only premature, but also overly simplistic, hazardous, hardly feasible in classroom practice, and, most importantly, detrimental rather than beneficial to the process of language learning. In the first place, when we consider yet again the factors which may impinge on the choices in the provision of corrective feedback included in Fig. 3.1, the only sensible conclusion can be that the value of a specific feedback move is heavily dependent on the situation in which it is used. For example, an implicit, input-providing recast might, despite its overall unobtrusiveness and lack of requirement for output modification, prove to be effective in drawing the learner's attention to the targeted feature or even bringing about subsequent repair if the feature has recently been taught and practiced, it is salient and functionally important, the learner is psycholinguistically ready to acquire it, he or she is endowed with a high phonological working memory capacity, and is positively predisposed towards oral error correction. By contrast, an elicitation of some kind, coupled perhaps with metalinguistic information, which is unequivocally explicit and aims to get the student to self-correct, may be of little avail when the error involves a structure that is not the immediate concern of the lesson, the learner has little explicit, not to mention implicit, knowledge of it, he or she is struggling to communicate something, is not particularly motivated and, on top of all of this, is primarily field-independent. Besides, recasting or explicit correction rather than some form of prompting might turn out to be indispensable in a situation when an

utterance contains multiple errors and it is thus impossible to single out any specific feature for self-correction.

What is also of relevance is the extent to which the provision of corrective feedback is integrated with curricular goals and the aims of a particular lesson as well as whether such reactive focus on form is planned and thus intensive, focusing on one feature or a set of such features, or incidental and intensive, targeting multiple linguistic items (see Sect. 1.6.1 in Chap. 1). In addition, it should be borne in mind that, as is the case with error correction during text-manipulation activities, dealing with inaccurate language forms in communication tasks will on many occasions also entail reliance on a combination of corrective moves with an eye to ensuring optimum effectiveness of the pedagogic intervention. In other words, when an input-based option, such as a recast fails to attain the intended goal, the teacher might draw upon an output-oriented clarification request and, should this prove ineffective as well, resort to more explicit types of correction, a possibility that has been addressed in some empirical investigations (cf. Muranoi 2000; Pawlak 2006a, 2008b). Also of service are non-verbal ways of informing the learner that a problem has arisen because in some situations a paralinguistic signal of some kind, such as a raised eyebrow or a shake of a head, will be sufficient to bring about a remedial reaction, which might obviate the need for the application of any of the options listed by Lyster and Ranta (1997). Commenting on the organization of repair in the language classroom, Seedhouse (2004, p. 153) points out that "(…) the focus of repair in meaning-and-fluency contexts is on establishing mutual understanding and negotiating meaning. In general, overt correction is undertaken only when there is an error which impedes communication". In the light of what has been said above, however, such an approach would be far too narrow and limited, since effective instruction has to involve the provision of feedback on a much wider range of features in accordance with the pedagogic agenda and the specific corrective moves should be carefully adjusted to a particular lesson, structure, learner and situational context.[40]

3.5.4.2 Types of Written Corrective Feedback

As was explained in Sects. 3.2 and 3.3, devoted to the discussion of the contribution of error correction to the development of linguistic knowledge (see in particular Fig. 3.1) and the characteristics of oral and written corrective feedback (see Table 3.1), respectively, the treatment of errors in writing mainly stimulates the growth of explicit, declarative knowledge. Correction of this kind is primarily intended for the learner who has created a written text, it is typically delayed in

[40] Although the papers focus in the main on research-related issues, the need to fall back upon a variety of CF moves and even to combine them in some situations has also recently been signaled more or less explicitly by Goo and Mackey (2013), Lyster and Ranta (2013), as well as Lyster et al. (2013).

nature, it can be directed at a wide range of features in addition to formal mistakes, it can only be explicit, it can be both direct or input-providing, when the accurate forms are supplied, and indirect or output-pushing, when learners are expected to self-correct in response to teachers' comments, and it can rely on metalinguistic information to a greater or lesser extent. It should be clarified that the discussion that follows is confined to errors in the use of the language system (e.g. grammar, vocabulary, spelling), rather than issues that are involved in content, coherence, design or mechanics, or what Harmer (2004) calls *correcting* written work rather than *responding* to it, which is the corollary of the definition of error adopted for the purposes of the present book. It should also be added that the main emphasis will be laid on the critical distinction between *direct* and *indirect* corrective feedback, with the options available to teachers within each of these two categories receiving the most attention, although a brief commentary will also be offered on the possible uses of writing conferences (Goldstein and Conrad 1990; Williams 2002, 2004), as well as the employment of some more comprehensive approaches to error correction (Evans et al. 2010; Polio and Williams 2010). Finally, while peer correction is without doubt an important alternative to teacher feedback in the case of written output and it will be more or less overtly implicated in the considerations, a more comprehensive discussion of this technique will be reserved until Sect. 3.5.5, which deals in its entirety with the sources of corrective information.

When the teacher is confronted with learners' written work, whether it takes the form of paragraphs, letters, essays or creative writing, and whether it is the outcome of a homework assignment completed in students' own time or a timed task performed in the classroom, the crucial decision that he or she has to make is whether to opt for *direct* or *indirect correction* of the inaccurate forms which appear in the texts. As Sheen and Ellis (2011, p. 593) illuminate, "[d]irect correction involves supplying learners with the correct form or reformulating the entire text; indirect correction involves indicating that an error has been committed either in the margin of the text or within the text where the error occurs". When the teacher chooses to supply the correct forms, he or she can do so by *crossing out the unnecessary element*, be it a morpheme, word, phrase or entire sentence, *inserting a missing element*, *writing down the correct version* above or near the linguistic error, or falling back on a *combination of these*. It is also possible to supplement this type of corrective feedback with *metalinguistic information* in the form of *rule explanations*, *examples of correct usage*, as well as more or less specific *references to textbooks*, *dictionaries* or *pedagogical grammars* (cf. Bartram and Walton 1991; Harmer 2004, 2007b; Bitchener and Knoch 2009, 2010), which, however, does not alter the fact that the learner is simultaneously furnished with positive and negative evidence. Whether and to what extent he or she chooses to utilize such information for language development is obviously an entirely different issue.

Teachers have even more possibilities at their disposal in the case of indirect treatment as it can take the form of simply *underlining*, *circling* or *marking the error* with the help of a highlighter, *indicating in the margin the number of errors* in a given line (e.g. using numbers, ticks), or *devising some kind of code* by means of which not only the occurrence but also the particular categories of errors can be

Symbol	Meaning	Example error
S	A spelling error.	*He gave away all his possesions and tresures.*
WO	A mistake in word order.	*I liked very much it.*
G	A grammar mistake.	*There were two boy on the bridge.*
T	A wrong tense used.	*I know her for ten years.*
V	A vocabulary mistake.	*My parents decided to lend money from my uncle.*
C	A concord mistake.	*People is angry.*
A	Lack or wrong use of article.	*The room was full of the books.*
PR	A wrong preposition.	*It depends from what you want to do tonight.*
R	A register problem.	*HiMr. Franklin,Thanks for the letter…*
P	A punctuation mistake.	*Although, he lived in Paris for years, he…*
( )	Something is not necessary.	*He was not (too) strong enough.*
V	Something has been left out.	*He told* V *that he was sorry.*
?	The meaning is unclear.	*That is a very excited photograph.*
!	A careless mistake.	*She like Arabic coffee the most.*

Fig. 3.3 An example of a coding system that can be applied in indirect written error correction (compiled on the basis of Bartram and Walton 1991; Harmer 2004, 2007b, and own data)

marked.[41] The use of a coding system, an example of which is included in Fig. 3.3, is especially lauded by methodologists because it helps "(…) avoid the overabundance of red ink [and it has] the advantage of encouraging learners to think about what the mistake is, so that they can correct it themselves" (Harmer 2004, p. 111). Clearly, it is possible to devise different coding schemes or simply employ the one introduced and followed in the coursebook, but it is of paramount significance that students be trained in the use of the symbols so that they will be able to recognize them and use them as a basis for introducing the requisite modifications (see Sect. 3.5.5 for more comments on the need for learner training in attending to and responding to CF). Although the rationale behind reliance on indirect feedback is to engage learners in self-correction and it is meant to be an output-pushing option, there is no guarantee that they will be more inclined to use such information than when they are supplied with the accurate forms right away. For this reason, rather than leaving students to their own devices by having them examine the feedback at

[41] It should be noted that there is some confusion in the literature as to whether reliance on a coding scheme represents a direct or indirect way of providing corrective feedback. It has traditionally been regarded as the latter, on account of the fact that it makes students responsible for coming up with the correct form (e.g. Ferris 2003; Hyland and Hyland 2006; Bitchener and Koch 2009). However, Bitchener and Koch make the following comment in their recent paper: "(…) we do not consider this to be an indirect form of feedback because it supplies additional metalinguistic information about the type of error from a linguistic perspective. For example, the provision of a code such as 'PS' for a past simple tense error is giving writers a form of direct metalinguistic feedback" (2010, p. 209). While there is merit to this reasoning, the fact remains that the use of a code imposes demands on the learner that are fundamentally different from a situation in which he or she is merely provided with the correct form and thus this CF strategy is regarded as indirect rather than direct in the present discussion.

home, it might be beneficial to create opportunities to do so in class. This might involve, for example, setting up group work activities, arranging whole-class feedback sessions, or rewarding students who are the most successful in correcting their own or their peers' errors. Trivial as it might sound, in order to avoid what Bartram and Walton (1991) label the *red pen syndrome*, teachers could also abandon the use of red, which is known to produce adverse reactions in many learners, in favor of a more congenial color, such as green. A potentially useful solution as well could be using different colors to mark different error types, although this practice would admittedly be time-consuming, its effects could hinge on individual learning styles, and it might not be equally suitable to every age group or educational level. A particularly rich palette of options in which inaccuracies in students' writing can be directly corrected or indirectly indicated is offered by modern technologies, with a brief overview of such possibilities being included in Sect. 3.6.

Although, as is the case with different types of oral corrective feedback, the contribution of direct and indirect written error correction to accuracy can only be established by carrying out carefully designed empirical studies, it is nonetheless possible to offer an evaluation of the two options from a theoretical and practical perspective. The supporters of indirect feedback options, like all those in favor of a more inductive approach to language learning, argue that they enable students to benefit from guided learning and problem-solving, which are believed to induce reflection on existing knowledge and ensure deeper levels of processing, which, in turn, lead to more successful self-editing and foster long-term acquisition of the target forms (cf. Landale 1982; Hyland and Hyland 2006). There are also specialists, however, who are of the opinion that immediate provision of the correct version, particularly when it is coupled with additional metalinguistic hints, comments, explanations and suggestions, brings with it a number of important advantages. These include, among other things, reducing the danger of confusion which may arise when the learner fails to grasp the error indicated by the teacher, cannot recall the meaning of the symbols, or cannot find a solution to the problem, supplying information that may be instrumental in the resolution of more complex inaccuracies, such as those involving sentence structure, idioms or metaphoric usage, as well as allowing students to unambiguously verify the hypotheses that they may have wished to try out as they were writing (cf. Bitchener and Knoch 2010). Apart from such considerations, a key factor that should be taken into account is the position of the writing component in the overall curriculum, because indirect correction may be more natural and desirable in writing courses in which learners' ability to edit and revise texts is at a premium, but much less so in general language classes, where writing is one of the many skills to be developed and thus direct correction may simply be a practical necessity (Ferris 2010). In the latter case, much also depends on the objectives of a specific writing assignment and the extent to which it fits in with overall curricular goals, indications of errors stimulating self-revisions being perhaps more suitable to compositions on a given topic rather than pieces of writing intended to practice the linguistic features taught. Of paramount importance is also the level of the students because the less proficient ones may simply be unable to correct

errors that have been marked for them due to their insufficient TL knowledge (cf. Ferris and Hedgcock 2005).

Yet another possibility of providing correction on writing is to organize tutorial sessions with students, or what is known in the literature as *writing conferences* (Goldstein and Conrad 1990; Ferris 2002; Williams 2002, 2004). Although such face-to-face consultations generate copious opportunities for interactionally negotiated feedback which has been discussed with regard to fluency-based tasks (cf. Weissberg 2006; Nassaji 2007a), they also constitute an environment in which students can ask questions about errors which have been directly or indirectly corrected, discuss the nature of such inaccuracies, seek advice on the adjustments they are planning to incorporate, or request additional explanations on a point of grammar, the use of a lexical item, or the appropriacy of a given word or phrase. As Bitchener, Young and Cameron (2005, p. 194) explain, "[m]any writing teachers consider one-on-one student teacher conferences to be potentially more effective than written corrective feedback because they provide an opportunity for clarification, instruction, and negotiation". While this comment may be true, a number of questions can be posed concerning the most efficacious organization of tutorial sessions of this kind with respect to their primary focus (e.g. content vs. form), the role of the teacher (i.e. more or less directive), the way in which the interaction should be steered to foster useful negotiation of form (Hyland and Hyland 2006), as well as the extent to which they should be linked to and capitalize on prior CF. There are also issues related to the cultural milieu, as in some educational contexts it may be uncustomary or impolite to take issue with the suggestions of teachers who hold the status of authority figures (Goldstein and Conrad 1990), and, again, the level of proficiency, since while more advanced students can indeed act as partners and build on the feedback received, the weaker ones are more likely to acquiesce to the advice offered (Patthey-Chavez and Ferris 1997). Finally, although individual conferences may be a perfect solution in the case of writing courses, such as those being an integral part of instruction in foreign languages departments, it is unfeasible to conduct them on a regular basis with students learning a language in school because of time constrains.

In conclusion to the discussion of the types written correction, it is also warranted to mention two broad approaches to the provision of such feedback which are more reflective of the philosophy of developing writing skills and thus impact to a greater or lesser extent all the stages of the decision-making process. One of them is the distinction between the *product* and *process paradigms* mentioned in passing in different sections of this book (cf. Matsuda and Silva 2010; Polio and Williams 2010; Hinkel 2011a), since they bring with them far-reaching implications for the ways in which inaccurate forms are dealt with. When the emphasis is laid on the final version of the text, the teacher is more likely to rely on direct correction, which is viewed as a tool helping learners improve their control over various target language subsystems, thus ensuring more accurate, error-free performance in the future. Even though some form of indirect feedback can also be employed, most likely in the form of a coding system, there will be little room for teacher-student conferences, feedback given by other students or subsequent

revisions. By contrast, when the process of composing a text lies at the heart of instruction, the teacher is required to intervene at various points in the writing cycle, with the corrective feedback extending far beyond formal accuracy to include aspects of content, mechanics and organization. Logically, when it targets the formal aspects of a piece of writing, it is bound to be more indirect so that learners have to explore the problems on their own and arrive at their own solutions rather than passively accept the ones prescribed by the teacher, and face-to-face individual tutorial sessions are likely to be the norm. A hallmark of this approach is also the involvement of other learners because, as Polio and Williams (2010, p. 493) elucidate, "[p]eer response (also called peer review or peer feedback) is another intervention that is common in process writing classrooms" (see the next section for more insights into peer correction).

The other integrated approach is called *dynamic written corrective feedback*, which is predicated on the "concept that feedback must focus on the most immediate needs of the learner as demonstrated by the specific error the learner produces. (…) in order to be most effective, this interactive strategy must adhere to four principles to ensure that the feedback is meaningful, timely, constant and manageable" (Evans et al. 2011, p. 232). In other words, correction has to respect the proficiency levels and individual profiles of learners, students should be able to understand and utilize it, and feedback should be provided immediately after the act of writing to create opportunities for practice which can stimulate the proceduralization and automatization of second language knowledge (DeKeyser 1998). Moreover, such feedback should be explicit and supplied at regular, frequent intervals over an extended period of time, it should address a wide range of errors, and it should simultaneously be limited in quantity, which can be accomplished by setting a strict time limit on writing assignments. Evans et al. (2010) give an example of a procedure which demonstrates how such principles can be translated into practice, which comprises the following steps completed within a week: (1) students write a 10-min paragraph on a general topic at the beginning of almost every class, (2) the teacher collects the paragraphs and corrects them using an established code for errors that students can treat, and supplements the symbols with direct corrections for features that take time to learn or are beyond learners' grasp, (3) on receiving their marked work students have to tally errors by type and create a list of all the errors in context, after which they revise, type and resubmit the paragraph, (4) the teacher marks the second draft for accuracy, this time relying only on indirect correction, (5) and (6), which are repeats of steps (3) and (4), to ensure that the paragraphs are error-free. Although the procedure seems complex, it definitely lends itself to application in general language classes, with the caveat that its use might have to be less frequent than its originators would envisage.

3.5.5 Who Should Correct Learner Errors?

When it comes to the source of corrective feedback, irrespective of whether such feedback is provided on errors in speech or writing, teachers have at their disposal

three possible courses of action: (1) they can correct the error themselves, thus engaging in *teacher correction*, (2) they can encourage the student who has produced the inaccurate utterance to do it, thus opting for *self-correction*, or (3) they can ask some other student to supply the correct form, in which case *peer-correction* takes place. As documented by the available empirical evidence and as most practitioners would undoubtedly attest, it is the first of these options that predominates in the majority of classrooms. This phenomenon may be attributed, among others, to the fact that teachers are charged with the responsibility to ensure high quality of learner output, they possess superior TL knowledge as well as training in teaching methodology which, in theory at least, make them best poised to deal with errors, and they are concerned with a smooth flow of the lesson in the face of the inevitable time constraints and the need to pursue curricular objectives. In addition, learners themselves tend to be convinced of greater value of teacher feedback and there are doubts about the quality of correction that students can provide (van Lier 1988; Allwright and Bailey 1991; Pawlak 2004b; Hyland and Hyland 2006; Miao et al. 2006; Ellis 2008; Pawlak 2010a). The educational context and opportunities for access to the target language can also be an important factor because, as Hedge (2000, p. 288) comments, "[i]n many foreign language situations, where there is little exposure to English or practice available in the community, error correction is an expected role for the teacher".

Yet, in light of the problems involved in teacher correction such as its inconsistency, imprecision and failure to cater to the needs of a particular student (cf. Long 1977; Nystrom 1983; Truscott 1996, 1999), the emphasis on fostering learner-centeredness and learner autonomy (cf. Tudor 1996; Benson 2001, 2007), and the arguments advanced by the proponents of interactionist hypotheses and theories (cf. Swain 1995; Long 1996; Lantolf 2006), increasingly more importance has been attached to learner involvement in eliminating inaccurate forms, either through self-correction or peer-correction. As Ellis (2009c, p. 7) writes, "[t]eachers are often advised to give students the opportunity to self-correct, and, if that fails, to invite other students to perform the correction (…). Such advice can be seen as part and parcel of the western educational ideology of learner-centeredness". Clearly, the presence or absence of opportunities for such involvement has to be viewed within the broader context of all the decisions that the teacher is obliged to make when responding to errors, in particular those connected with the timing and manner of correction. Since these issues have been dealt with at length in the preceding sections, the focus of the present considerations will be on the advantages and drawbacks of self- and peer-correction, with references to the other stages in the decision-making process being reduced to the minimum.

When it comes to oral correction, learners can be encouraged to self-repair inaccuracies in their utterances when incorrectness is indicated to them in accuracy-based activities or when output-prompting rather than input-providing corrective moves are employed during fluency-oriented tasks (see Sect. 3.5.4.1). In the latter case, much also depends on the timing of the intervention, as it is delayed treatment (e.g. when the teacher waits until the end of the activity) or postponed treatment (e.g. when learners identify and treat errors in the transcripts of their interactions in a subsequent class) that lend themselves better to self-correction

than immediate treatment. On a more general level, encouraging self-correction in communication-based tasks and activities requires giving students *space* and *time* (Garton 2002), where the former entails creating opportunities for less rigidly controlled interaction patterns (Johnson 1995), and the latter involves prolonging *wait time*, or the amount of time the teacher is ready to wait before he or she takes the floor after asking a question (Rowe 1986). In the case of writing, learners can be induced to perform the correction when the teacher elects to provide indirect rather than direct feedback (e.g. by using error correction codes) or arranges tutorial sessions. It should also be stressed that the sheer permanence of written output makes it much easier for the teacher to verify the quality of learner modifications than would ever be possible in the course of ongoing, evanescent classroom interaction, where things often happen in the blink of an eye and decisions regarding correction have to be instantaneous.

The most obvious argument for making students responsible for providing the accurate form is aptly summarized by Allwright and Bailey (1991, p. 99), who comment that: "[n]o matter how hard a teacher tries to correct errors, only the learner can do the learning necessary to improve performance, regardless of how much treatment is provided". In other words, unless the learner understands the nature of the error and invests some effort in fixing the problem by himself or herself, teacher intervention may prove to be futile, not least because students may take little heed of the correction and, even when they repeat the correct version, they might do so somewhat mindlessly. Another important consideration is related to the fact that there is mounting empirical evidence that prodding learners to perform the correction by themselves, both in speech and writing, is effective in promoting second language development and might in some situations work better than immediate provision of the accurate form by the teacher (cf. Lyster 2004; Ferris 2006; Hyland and Hyland 2006; Lyster and Saito 2010; see Chap. 4 for an overview of relevant research findings). Despite all the benefits of self-correction, however, it also suffers from shortcomings, which include the already mentioned preference for teacher correction on the part of learners, the fact that they need to possess the necessary linguistic knowledge to deal with the problem, which is often not the case, and the danger of wrong interpretation of the corrective move or misunderstanding of the comment supplied (cf. Sheen and Ellis 2011). Although a possible solution could be the application of a two-stage procedure in which the teacher first offers the learner a chance to self-correct and, only after this is to no avail, provides the correct form, this does not remove one crucial factor out of the equation, namely time constraints. Getting learners to self-correct is just too time-consuming to be utilized in response to every error or even most errors, and this qualification applies in equal measure to classroom interaction, where many objectives have to be attained, and out-of-class marking of written work, which might become unfeasible were it necessary not only to correct errors but also regularly check the accuracy of students' modifications. Thus, the present author concurs with Ellis (2009c, p. 8) that on many occasions "(…) it would be simpler and perhaps less intrusive to simply provide explicit correction".

The other way of generating learner involvement in the process of error treatment is by fostering peer-correction, which, however, does not seem to be equally feasible and beneficial in the case of oral and written output. As regards the former, it might undoubtedly be useful in the course of accuracy-based activities, as in a situation when a student cannot fix a problem by himself or herself and other learners are requested to help out, although it is difficult to see what benefits could accrue from frequent reliance on this practice. Things become much more complicated during fluency-based activities, where inviting other students to step in would be extremely disruptive as not only would it be tantamount to compromising the communicative nature of the activity but would also involve interrupting the speaker, disregarding what he or she has to say and possibly elevating the level of anxiety. A solution could be reserving such correction until the end of the activity, as the case might be with analyzing transcripts of an oral task (e.g. Mennim 2012) or using an observer who is tasked with jotting down the errors during a small group work activity that are later discussed by all the members of the group (e.g. Edge 1989). Obviously, in such cases, it is perhaps no longer appropriate to talk about corrective feedback during a communication task but rather about the performance of some kind of a consciousness-raising activity. Peer-correction is much more natural and easier to promote in the case of written language production and, therefore, as will be recalled from the previous section, it constitutes an integral part of the process approach to the development of writing skills. Apart from offering comments on their peers' essays in the process of drafting and redrafting, which is perhaps more suitable to a writing course, learners can work in pairs in order to collaboratively analyze the errors indirectly indicated by the teacher, or the whole class could be invited to collectively correct errors gleaned from various assignments which are displayed for everyone to see or distributed in the form of handouts.

Methodology coursebooks are replete with arguments in favor of using peer-correction, both with respect to speaking and writing. Commenting on the former, Edge (1989) points out that it involves students more deeply in the process of learning, reduces their dependence on the teacher, enables them to learn from each other, develops the skills of cooperation, and aids the teacher in better diagnosing students' problems. Harmer lists similar advantages in regard to writing, arguing that "[p]eer review, therefore, is less authoritarian than teacher review, and helps students to view both colleagues and teachers as collaborators rather than evaluators" (2004, p. 116). There is also some empirical support for the utility of this type of correction, although in the case of oral feedback it is mainly limited to studies of collaborative dialogue during text-reconstruction tasks (see Swain 2005; Pawlak 2011a, for reviews) and it is also far from clear-cut in the case of written correction. For example, Hyland and Hyland (2006, pp. 90–91) argue that "[s]tudies have questioned L2 students' ability to offer useful feedback to each other and queried the extent to which students are prepared to use their peers' comments in their revisions", whereas Polio and Williams (2010, p. 494) remark that "(…) peer response instruction, not peer response itself, is beneficial". There are also more pedagogically-oriented concerns, which are similar to those

touched on when discussing self-correction, and related to time limitations, learners' deficient ability in the target language as well as their beliefs and preferences. The most damaging to the value of peer-correction, though, might be a negative affective response it may evoke since, when it is conducted in an insensitive and thoughtless manner, it might lead to discouragement and humiliation. After all, learners are accustomed to being corrected by the teacher even if such feedback may be painful, but being laughed at and ridiculed could do serious damage to their self-esteem, self-concept and self-efficacy.

Irrespective of whether learner involvement in error treatment is understood in terms of self-correction or peer-correction, its quality can be considerably enhanced if students benefit from *training* in this area. The need for such training, which could be in fact referred to as a variant of *strategies-based instruction* (Rubin et al. 2007), is hardly ever mentioned in the literature devoted to the provision of oral corrective feedback, even though it stands to reason that it would be of tremendous value in aiding learners in negotiating language forms in more effective ways (cf. Lyster, Saito and Sato 2013). They could be instructed, for instance, in how to monitor their own speech as well as that of the teacher and their peers, attend to and notice the various corrective moves, respond to them in the right way by making an attempt at uptake and repair, and also provide feedback on the oral output of others (cf. Pawlak 2006c, 2007d, 2009). This training could take the form of awareness-raising activities, offering examples of output modifications, teaching expressions that can be drawn upon to direct speakers' attention to incorrect forms, setting up tasks necessitating negotiated interaction, and ensuring that the use of linguistic features is regularly negotiated in classroom discourse. Also of assistance could be asking learners to transcribe recordings of spontaneous interaction and to use output-prompting CF moves in the process (cf. Mennim 2012), or conducting direct instruction in the application of *grammar learning strategies* aimed at facilitating the utilization of corrective feedback in this area (e.g. noticing error correction in spontaneous communication) (cf. Pawlak 2011d, e, 2012c).

The situation looks much better in the case of written correction, where the need to train students in how to respond to indications of their own errors as well as to provide feedback on the work of their peers has been recognized for a long time. As regards the first of these tasks, Harmer (2004, p. 117) comments that "[w]e need (…) to train them to read their own work critically so that they can make corrections and changes with or without our guidance". This might involve employing tasks in which learners are asked to identify mistakes, introducing a correction code and providing adequate practice in its use, gradually replacing the symbols with less specific indications of errors (e.g. underlining, margin marks), using error checklists, or conducting one-on-one writing conferences (Harmer 2004). As to peer response, Hyland and Hyland (2006, p. 91) make it clear that "(…) careful preparation and training are essential for successful learner response". One such training procedure is described by Min (2006), who incorporated into his writing classes what Tsui and Ng (2000) call *a modified writing cycle* comprising a brainstorming session followed by writing three drafts, each

responded to by peers or teachers by means of oral and written feedback, before composing the final version of the paper. Instruction in peer response took place during the second and third writing cycles and it involved in-class modeling, in which a think-aloud method was employed to demonstrate how to clarify writers' intentions, pinpoint the sources of problems, explain the nature of such problems, and make specific suggestions, and teacher-reviewer conferences, which were devoted to a discussion of the comments made by reviewers and evaluated by the teacher on a three-point scale. A word of caution is in order, however, on the usefulness of this kind of instruction. This is because, while all learners are likely to benefit to some extent from instruction aimed at increasing the chances of uptake and successful repair in response to oral feedback as well as enhancing the quality of such feedback provided on peers' output, training in peer response to writing of the kind described by Min (2006) is more suitable to classes specifically dedicated to the development of this skill and the rationale for its use in general language classes should be carefully premeditated.

3.6 Computer-Mediated Error Correction

As Chapelle (2010, p. 585) writes in her overview of computer-assisted language learning (CALL), "[i]n many parts of the world, learners engage in communication with peers and pursue their academic goals through the use of information and computer technology. (…) Whereas 20 years ago teachers using computer technology to help learners with their language study were seen as innovative and unconventional, today teachers who fail to draw upon technology in language teaching are likely to be considered at least out-of-date". Clearly, this comment is also applicable to error correction, which can be delivered or mediated with the assistance of the computer, with the important caveat that in such electronic environments all the decisions that teachers have to make with respect to whether, what, when, how and who should provide the treatment coalesce with those that have been the concern of the previous sections and therefore there is no need to elaborate on them one more time. It should also be noted that in the case of computer-mediated feedback, the distinction between the correction of inaccurate language in oral and written output is no longer so straightforward. This is because while a clear line can be drawn between situations in which interlocutors can actually hear and/or see each other, as when learners talk to each other or their teachers through Internet communicators which allow conveying audio and/or video, and those in which students have their written work marked electronically in one way or another, it is much more difficult to unequivocally determine the nature of text-based exchanges taking place in real-time which can be said to fall somewhere in between the spoken and written mode, and exhibit the features of both (cf. Smith 2003). In light of the fact that the amount of literature on technology-aided error correction has grown exponentially in recent years and its exhaustive overview would require a separate book-length publication, the discussion in this

section is only intended to highlight the most crucial issues involved in the provision of this type of feedback. For clarity, the considerations are structured according to the distinction between *synchronous* and *asynchronous computer-mediated communication* (CMC), or such that transpires in real-time (e.g. the use of instant messaging software), and such in which the responses of interlocutors are separated by a time delay of some sort (e.g. the use of e-mail), respectively (cf. Beatty 2003; Dudeney and Hockly 2007; see Chun 2011 for a discussion of the types of first and second generation CMC or CMC 1.0 and Web/CMC 2.0).[42]

Computer-generated feedback on spontaneous target language output is still of limited utility, not least because of the problems involved in electronic recognition of unpredictable speech and the conversion of such language into a sequence of words (Ockey 2009). On the other hand, communication involving the use of audio and media mirrors to some extent face-to-face interactions and although second generation CMC and Web 2.0 resources provide a wide range of new opportunities in this respect (e.g. intelligent CALL, virtual worlds such as *Second Life*, or multiplayer games), their full potential for the provision of feedback has yet to be explored (cf. Chun 2011). For these reasons, the contributions of synchronous CMC to error correction have mostly been discussed and empirically investigated with respect to text-based interactions in real time with the help of such software as *ChatNet* (e.g. Smith 2005) or *MSN Messenger* (e.g. Yilmaz 2011), notable exceptions being the studies conducted by Fiori (2005), Jepson (2005), Sagarra (2007), or Sagarra and Abbuhl (2013), among others.[43] As students communicate through this medium with teachers or other learners, their erroneous utterances can be immediately followed by different types of feedback which could differ with respect to their explicitness (e.g. recasts vs. elicitation), the requirement for output production and thus self-correction (i.e. recasts vs. prompts), the targeted language subsystem (i.e. grammar, lexis or pragmatics), and the intensity of the didactic focus (i.e. a specific feature or a wide range of features) (see Ortega 2009b, for an overview of relevant studies).

In the words of Smith (2003, p. 39), "(…) synchronous CMC may provide an ideal medium for students to benefit from interaction primarily because the written nature of computer-based discussions allows a greater opportunity to attend to and reflect upon the form and content of the message, while retaining the conversational feel and flow as well as the interactional nature of verbal discussions".

[42] The author is fully aware that such a distinction is to some extent artificial because it is somewhat far-fetched to equate comments included in a learner's essay by means of a text editor with computer-mediated communication. It is also limited in the sense that it does not offer a comprehensive account of computer-delivered feedback, especially with respect to oral errors. This simplified approach seems to be warranted, however, in the case of a discussion that aims to provide a very general overview of computer-mediated feedback rather than a detailed coverage of all the ways in which it can take place.

[43] It should be noted, however, that in the last two of these, the activity was in fact a grammar exercise, in which learners were asked to fill out blanks in sentences with the targeted structure and were provided with various types of oral CF through headsets when they made a mistake. As such, it does not represent spontaneous communication.

In addition, these online exchanges, which can be described as representing *conversation in slow motion* (Beauvois 1992), boast a number of other advantages, such as increasing the amount of participation, enhancing the quantity and quality of learner production, inducing students to produce pushed output and pay more attention to linguistic form, as well as increasing their willingness to engage in risk-taking and to test hypotheses (cf. Chun 1994; Warschauer 1996; Blake and Zyzik 2003; Smith 2005). Since interaction of this kind can easily be electronically preserved, it can also provide a point of departure for self- and peer-correction on completion of specific tasks, as is the case with transcript analysis and ensuing face-to-face negotiations of form (cf. Lynch 2007; Mennim 2012; see the preceding section). All of these advantages notwithstanding, it should be emphasized that feedback delivered during synchronous CMC is not meant to replace adept error treatment provided on a regular basis in class, but rather complement and enhance it. The degree to which it can be utilized and its efficacy will also depend on the availability of the requisite hardware, software, abilities and training, adequate planning and monitoring, as well as teachers' and students' preferences (cf. Pawlak 2011f).

The number of ways in which computer-mediated corrective feedback can be offered is much greater in the case of asynchronous communication, which is taken here to refer both to situations in which the intervention focuses on the errors committed in an email, a message on a bulletin board or a blog entry, and to cases when teachers correct their students' essays with the assistance of computer technology. Perhaps the simplest way in which such feedback can be provided includes the use of what Hyland and Hyland (2006) call *computer conferencing*, which involves, for example, the use of text-editing software or email.[44] In this case, teachers could simply include the changes, comments and suggestions in the body of a piece of writing using various colors, engage the *Track Changes* tool, thanks to which it is possible to suggest amendments, corrections or notes that can be subsequently accepted or rejected by the learner, send comments on subsequent drafts of written assignments via email, receive or return such assignments though online courseware (e.g. *Blackboard*), or use bulletin boards to encourage peer feedback (cf. Harmer 2004; Hewings and Coffin 2006; Vyatkina 2010). The benefits of this type of electronic feedback are its permanence, as comments can be automatically saved for later retrieval, and the contribution it makes to the development of student metacognitive awareness of linguistic features as well as learner autonomy (cf. Sengupta 2001; Yuan 2003).

There is also the option of using sophisticated computer software to provide *automated* or *intelligent feedback*, in which case texts composed by students are scanned by the program and immediate evaluative comments are generated. Heift (2010) explains that the responses furnished by such systems can vary considerably in terms of their specificity, ranging from a mere indication of an error, as

[44] In fact, Hyland and Hyland (2006) include in this category both synchronous and asynchronous CMC but, due to the approach adopted with respect to the organization of this section, only the latter is discussed here.

when a generic comment like 'Wrong, try again!' is supplied, through displaying detailed information about the error and thus prompting the learner to self-correct, to direct provision of the correct form. Another continuum can be created with respect to reliance on text and graphics to indicate the problem, with some combination of a comment and highlighting falling somewhere in between.[45] While the use of such software could indeed relieve teachers of the need to spend inordinate amounts of time marking learners' essays, so far it has mainly found application in large-scale testing. Much more disconcerting, however, is the fact that such software is limited in the sense that the corrective response is based on the application of algorithms and not actual reading of the text, and not only does it ignore the meanings expressed but may also misinterpret some aspects of usage, thus creating negative washback (Condon 2006; Ericsson 2006; Hyland and Hyland 2006; Ware and Warschauer 2006). As Ockey (2009, p. 842) thoughtfully warns, "(…) effective writing is not simply prose based on organization, accuracy, sophistication of vocabulary, and other similar aspects that current computer systems can evaluate". Worth mentioning is also *corpora-based feedback*, which makes it possible, for instance, to hyperlink errors in electronically submitted pieces of writing to concordancing files or online resources including corpus data, where the use of TL features can be examined, an approach that is likely to foster self-correction (cf. Hyland 2003; Milton 2006; Hyland and Hyland 2006). While the usefulness of these feedback types can hardly be disputed, their successful application is conditioned upon fulfilling the requirements that have been mentioned with respect to error correction in synchronous CMC. What is more, with the exception of computer conferencing, most teachers do not have the needed software at their disposal and even if they did, it is dubious whether time, effort and financial resources invested in the provision of such feedback would produce the expected payoff, especially in classes where writing is but one of the skills and subsystems to be taught and learned.

3.7 Conclusion

The present chapter has been devoted to the discussion of the pedagogical choices available to teachers with respect to the correction of errors in spoken and written output. At the outset, the contributions of these two modes of feedback were considered and it was concluded that whereas the treatment of inaccurate forms in learners' written work promotes in the main the development of explicit, declarative knowledge, in the case of oral feedback, much depends on whether it is given in accuracy-based work, as represented by text-manipulation activities,

[45] Although the study conducted by Heift (2010) focused on feedback provided on linguistic exercises rather than written work *per se*, the distinctions she discusses are still relevant to this discussion.

or fluency-oriented tasks, as embodied in text-creation activities and focused and unfocused communication tasks. While the former can be hypothesized to lead to the development and proceduralization of rule-based knowledge, the latter can also perform this function but in addition can as well lead in direct ways to the growth and automatization of implicit, procedural representation. This was followed by a comparison of the main features of oral and written correction, which demonstrated that although the two modes indeed differ, there are also key similarities between them. To be more precise, while the latter is mainly provided offline, it is always explicit and thus its interpretation is unambiguous, its focus is exceedingly complex and it performs a clearly didactic function, the available sources of corrective information are identical in both cases, teachers can avail themselves of either input-providing and output-prompting options, and they can supplement them with more or less elaborate metalinguistic information. Subsequently, emphasis was shifted to more pedagogically-oriented issues, and a strong case was made for considering the provision of corrective feedback within the boarder context of the overall syllabus as well as the objectives pursued in a particular lesson or a sequence of lessons. In other words, it was argued that, rather than viewing correction as a somewhat optional, one-shot affair, as some methodologists appear to suggest, it is necessary to incorporate it thoughtfully into instructional sequences, so that it can foster and expedite the process of teaching and learning TL forms. The core of the chapter, however, was devoted to the discussion of the decisions that teachers have to take as they respond to errors in speech and writing, related to whether such errors should in fact be corrected, when such intervention should most propitiously take place, which linguistic features are the best candidates for such treatment, how the feedback should be provided, and, finally, who should be responsible for the correction. Finally, some comments were offered on the possibilities offered by computer-mediated feedback, which holds a lot of promise for practitioners but also brings with it many pitfalls that should be avoided.

One conclusion that emerges from this overview is that although some decisions may appear more beneficial than others when they are judged according to theoretical, empirical or purely pedagogic criteria, effective feedback is heavily context-dependent, with the effect that it is simply unfeasible to offer a set of infallible guidelines that would prove to be efficacious in all situations. To give an example, while it may be warranted to say that focused feedback is more effective than unfocused feedback or that explicit feedback moves are likely to work better than implicit ones, such a recommendation surely does not hold for every student, TL feature, activity or lesson. To make matters even more complicated, all these decisions are intricately intertwined, which undoubtedly makes the process of correction an exceedingly difficult task. This evaluation applies in particular to the provision of feedback in the course of ongoing, spontaneous classroom interaction, where decisions have to be made in a split-second, learners' utterances overlap and different priorities are bound to constantly vie for the teachers' attention. As Hedge (2000, p. 292) wisely remarks, "(…) error correction is considered to be one of the most complex aspects of classroom management, requiring substantial judgment and skill on the part of the teacher", an opinion that is shared by Ellis

(2008, p. 803), who points out that "[p]robably the main finding of studies of error treatment is that it is an enormously complex process". An important way in which more insights can be gained into the value of different types of feedback and the factors which impinge on their effectiveness is by conducting empirical investigations. An overview of the main findings of such research will be the focus of the following chapter.

Chapter 4
Research on Error Correction

4.1 Introduction

The preceding chapter has adopted a predominantly pedagogic perspective by discussing the possible effects of oral and written error correction with respect to the development of explicit and implicit knowledge, the distinctive characteristics of the two types of feedback, as well as the decisions that teachers have at their disposal in this respect, offering simultaneously some comments on the value of specific corrective techniques. While recommendations of this kind have been firmly grounded in theoretical positions and also taken account of purely practical, classroom-based considerations, it is clear that the genuine effectiveness of different types of corrective feedback, irrespective of whether it is oral, written or computer-mediated can only be established by means of properly designed and conducted empirical studies which should ideally also investigate the impact of intervening variables. As Li (2010, pp. 309–310) comments in his meta-analysis, "[t]he past decade has witnessed a rapid increase in empirical research on the effectiveness of corrective feedback", but, truth be told, major advances in this field have spanned almost the entire last two decades. This dramatic growth is closely tied to the revival of interest in grammar teaching, and it was fueled in particular by Long's (1996) seminal distinction between a focus on form and a focus on forms and the empirical investigations of form-focused instruction that these developments have spurred (see Sect. 1.6 in Chap. 1 for a discussion of the place of CF in various frameworks of FFI).

Ellis (2010b) makes the valid point that the enhanced interest in the study of corrective feedback can be attributed to the fact that: (1) it is of considerable theoretical relevance, in that it enables the verification of the competing claims deriving from different theories and hypotheses, (2) it is of practical concern for language teachers who are often in a quandary over whether and how to react to learners' incorrect output, and (3) it is an area that lends itself to research, as corrective moves can be rather unambiguously identified in classroom interaction and their characteristics can be easily manipulated for the purpose of experimental

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studies. It is also possible, though, to observe a marked evolution in the foci and methodology of research into correction, both in the oral and written mode. As regards the former, this has been reflected in the momentous shift from primarily descriptive studies intended to offer insights into how error correction takes place, how it affects the patterns of classroom interaction and how various corrective moves can be classified, to experimental research seeking to determine the impact of different feedback types on learners' mastery of the targeted linguistic features, typically operationalized as accuracy of their use in different tasks. In a much similar vein, the latter has involved a so-much-needed progression from the main preoccupation with students' ability to revise their original pieces of writing in response to direct or indirect error treatment to experimental designs in which, again, the chief concern lies with establishing the long-term effects of the pedagogic intervention on language development, as evidenced by the subjects' ability to use the corrected language forms in entirely new texts. In both cases, an increasing emphasis has also been laid on variables that can impinge on the effect of feedback strategies, such as those related to individual learner differences, the inherent features of the targeted forms, contextual factors, as well as the response on the part of the student being corrected (cf. Ellis 2008, 2009c, 2010b; Sheen 2010a, b; Sheen and Ellis 2011).

The present chapter is intended as an overview of the most significant findings of these research endeavors with a view to determining the extent to which the recommendations made earlier in this work about the utility of different pedagogical choices fit in with the available empirical evidence and thus offering a more solid basis for guidelines on how oral and written error correction can most beneficially be carried out in the language classroom. With this goal in mind, a tentative framework for investigating corrective feedback will firstly be introduced, which will specify the components that can become an object of inquiry for scholars and, as such, will serve as a point of reference for the subsequent discussion. This will be followed by the presentation of the outcomes of the pertinent studies, with a division being maintained into those dealing with the contributions of oral and written error treatment. The two sections will be structured in an identical manner, first offering comments on the developments in research methodology, and subsequently outlining the research findings in terms of the effectiveness of different types of CF, the influence of moderator variables, and the potential contributions of learners' engagement, understood as their behavioral, cognitive and affective reactions to the correction. They will also include, whenever deemed necessary, references to relevant studies of computer-mediated feedback. The rationale for such an approach is that although this line of inquiry has indeed become robust over the last few years, many of the research questions it addresses mirror those posed in more traditional empirical investigations, and therefore there is no need for a separate section devoted to such research, a solution that is favored by many specialists (e.g. Ellis and Sheen 2011). It should also be stressed that the following discussion focuses mainly on the empirical evidence relating to the question of *how* errors committed in oral and written output should be responded to rather than to issues pertaining to the most common patterns and practices in

this respect, the overall justification for CF, the timing and source of correction, as well as instructional procedures of which it is but one element. This is in part because some of these have been dealt with at length in the previous chapters (e.g. the rationale for correction), partly for the reason that the available empirical evidence is far too skimpy to be subjected to scrutiny (e.g. the timing of correction), and partly on account of the fact that they are peripheral to the focus of this book or could not be satisfactorily accommodated here due to space limitations (e.g. learner-initiated focus on form, including peer feedback in different types of text-reconstruction activities). Finally, no attempt is made to formally distinguish between classroom-based and laboratory studies in the presentation of the research findings, although the author is fully cognizant that the latter may produce greater treatment gains and emphasizes this whenever necessary.

4.2 A Tentative Framework for Investigating Error Correction

Before undertaking the discussion of studies investigating the value of different types of error correction, it is warranted to briefly outline a framework on which such deliberations will be based. One possible framework of this kind could be the diagrammatical representation of the variables influencing the pedagogic choices in the provision of oral and written feedback that was succinctly discussed as part of the introduction to Sect. 3.5 in Chap. 3. As will be recalled, it was assumed that the decisions concerning whether, when, what and how to correct as well as who should perform the correction are a function of a wide array of factors, related to the broader instructional setting, the focus of a particular lesson as well as previous lessons, the characteristics of the targeted linguistic feature, learner and teacher variables, as well as long-term learning outcomes, all of which interact in complex and unpredictable ways. Although this comprehensive model is without doubt invaluable for outlining directions that could be pursued by future research projects, it is much too meticulous to serve as a point of reference for an overview of the existing empirical evidence, for the simple reason that many of these facets have thus far been barely tapped by researchers (e.g. teacher characteristics) or they have yet to become the object of empirical inquiry (e.g. syllabus choice, the reciprocal relationship between correction and learning outcomes).

In consequence, the choice fell upon the componential framework for examining oral and written corrective feedback proposed by Ellis (2010b, p. 337), which, by his own admission "(…) is intended not so much as a theory of CF but as a heuristic that can inform research". However, the scheme adopted for the purpose of the discussion presented in the following sections is not an exact replica of that framework on account of the fact that it also recognizes the potential impact of linguistic factors that Ellis (2010b) failed to include among the variables mediating the effects of the corrective reactions. In light of what has been said above, there is also a fundamental difference when it comes to the intended application

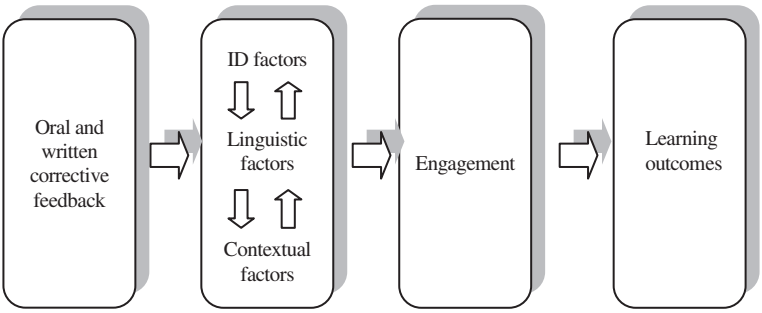

Fig. 4.1 A revised framework for investigating corrective feedback (adapted from Ellis 2010b, p. 336)

of the model since, rather than acting as a blueprint for empirical investigations of correction, a role which is seen as better suited to the multi-faceted scheme in Fig. 3.2, it is merely employed as a useful tool for imposing some order on the findings of the research conducted to date. It is thus referred to as tentative since it is bound to undergo substantial modifications and extensions when future studies provide even more insights into factors that may be involved in error treatment.

4.2.1 Types of Corrective Feedback

As can be seen from Fig. 4.1, the model consists of four major components, the first of which is the corrective move that follows the commission of an error in speech or writing, and can be regarded as the most significant factor contributing to language development. In view of the fact that the choices available to the teacher in this respect have already been dealt with in detail in the preceding chapter and they will figure prominently in the overview of the research findings below, it will suffice to reiterate here the key distinctions that have provided a stimulus for most empirical investigations. As regards the correction of oral errors, the most importance has been attached to the differences between *input-providing* and *output-pushing* corrective moves, on the one hand, and *explicit* and *implicit* feedback strategies, on the other (cf. Ellis 2008, 2009c, 2010b; Lyster and Saito 2010; Sheen 2010a, b; Sheen and Ellis 2011; Lyster et al. 2013).[1] The former distinction

[1] Ellis (2010b) draws attentionto the fact that different theoretical justifications can be provided for each of these two distinctions. In the case of input-providing and output-inducing corrective feedback, for example, the claims of cognitive interactionist theoretical positions, such as the modified version of the Interaction Hypothesis (Long 1996), according to which it is input that constitutes the driving force of second language development, are pitted against the tenets of Skill-Learning Theory (De Keyser 1998, 2001), which posits that the production of output is indispensible for acquisition.

is concerned with the presence or absence of a requirement for uptake and repair, and it is typically operationalized as the employment of *recasts* and *prompts*, whereas the latter is reflective of the level of learners' awareness that their utterance is subject to some kind of evaluation and could be exemplified by the use of *recasting* and the provision of *metalinguistic information* (see Sect. 3.5.4.1 in Chap. 3). Clearly, the classification is not without its shortcomings, the most crucial of which are highlighted by Ellis (2009c, p. 8), who concedes that "[s]uch a system is somewhat crude (…) as it fails to acknowledge the variation that can occur in the performance of a single CF type", adding that "[d]epending on the particular way the recast is realized, it may be implicit (as in the case of full recasts performed in isolation, as a confirmation check, and without any prosodic emphasis) or much more explicit (as in the case of partial recasts performed in conjunction with another CF strategy, such as repetition, and as a statement with prosodic emphasis)". While these reservations are salutary and they apply in equal measure to other corrective moves, it is an incontrovertible fact that the two distinctions are the ones that have been the most thoroughly researched, sometimes in combination, and they are regularly mentioned in state-of-the-art publications dealing with the provision of CF, many of which are penned or at least coauthored by Ellis (Ellis 2008, 2010c; Sheen and Ellis 2011).

In the case of written error treatment, most studies undertaken to date have focused on the distinction between *direct* and *indirect corrective feedback*, or such that supplies learners with the correct form and such that only indicates the problem in the hope that they will be able to fix it (Hyland and Hyland 2006; Ellis 2010c; Sheen 2010a; Sheen and Ellis 2011; see Sect. 3.5.4.2 in Chap. 3 for details). Both of these feedback types are necessarily explicit, they can be realized in a variety of ways and they can be coupled with metalinguistic information (e.g. Bitchener and Knoch 2010; Sheen 2010c). They could also be regarded as corresponding to some extent to the input-providing and output-prompting types of oral corrective feedback, with the caveat that the parallel can only go so far because, whereas the learner is obliged to attempt self-repair in response to, say, a clarification request, following the use of an inaccurate form in speaking, there is no guarantee that he or she will bother to revise his or her written work when provided with suggestions of correct forms or indications of errors (cf. Ellis 2010b).

4.2.2 Mediating Variables

The second component included in the framework deals with the different variables that might impinge on the effectiveness of the corrective moves that may be drawn on by the teacher (but also, conceivably, another student), which can be related to *individual differences between learners*, *the inherent characteristics of the linguistic features*, as well as *contextual factors*, with the three categories also inevitably interacting with each other. When it comes to the first element, there is a wide literature on the impact of *individual variation* on language learning

(e.g. Dörnyei and Skehan 2003; Ellis 2004b; Dörnyei 2005; Ellis 2008; Cohen 2010; Pawlak 2012b), and a broad array of *cognitive* (e.g. age, aptitude, memory, cognitive styles), *affective* (e.g. anxiety, motivation, personality) and *social* (e.g. attitudes, beliefs, gender, preferences) facets could be hypothesized to mediate between the corrective intervention to which students are exposed and the character and degree of their engagement with negative feedback, thereby influencing long-term language development. In reality, though, only a small fraction of these influences have thus far become the object of empirical inquiry, and even in the case of those that have attracted the attention of researchers (e.g. aptitude, working memory, anxiety), the available evidence is tenuous. As Ellis (2010b, p. 339) concedes, "[t]he vast bulk of CF studies has ignored learner factors, focusing instead on the relationship and the effect of specific CF strategies and learning outcomes".

Moving on to the *mediating effect of linguistic features*, it can be assumed that different errors may respond differently to the corrective moves used by the teacher, with the effect that the pedagogical intervention may prove to be more effective for some target language forms than others. This could be related to the *complexity of a linguistic feature*, with the important qualification that this notion can be understood in a variety of ways. One possibility is to base the distinction between simple and complex items on a single criterion, which can be defined in terms of *developmental readiness* and the related ability to perform the required syntactic operations (e.g. Pienemann 1989; Mackey and Philp 1998; Spada and Lightbown 1999), the *transformational criteria* related to the degree of manipulation needed for morphological and syntactic rules (e.g. Hulstijn and de Graaff 1994; Williams and Evans 1998; Pawlak 2006a; Spada and Tomita 2010), *salience* (e.g. Doughty and Williams 1998b; Goldschneider and DeKeyser 2001), *communicative value* (e.g. Spada and Lightbown 2008), the impact of the L1 (e.g. White 1991), or the dimension of the feature, i.e. its *form*, *meaning*, and *the relationship between the two* (cf. DeKeyser 2005). An alternative approach is adopted by Ellis (2006a), who, drawing on such criteria and other considerations, discusses linguistic difficulty in terms of implicit and explicit knowledge. He argues that the development of the former depends on the *frequency*, *salience*, *functional value*, *regularity* and *processability* of a linguistic feature, whereas the growth of the latter is contingent on the *conceptual clarity* of that feature and the need to use *metalanguage* in providing explanations. Although, as demonstrated by the meta-analysis conducted by Spada and Tomita (2010), such factors have been taken into account in empirical investigations of form-focused instruction, this area is in urgent need of further research, particularly in the domain of correction, in which only a handful of studies exploring the mediating effect of the TL feature can be found (e.g. Ellis 2007; Yang and Lyster 2010).

Finally, the effects of different types of error correction also hinge upon the *context* or *situation* in which it transpires, which can be understood in a more general or a more specific way, or what Ellis (2010b) refers to as *macro factors* and *micro factors.* The former pertain to the *characteristics of the overall educational setting*, as exemplified by immersion education, foreign and second language contexts, or study abroad programs, while the latter are mainly confined to what

happens in the language classroom with respect to the *activities* that learners are performing as they receive correction, the *nature of interaction* during such lessons, or the presence of *prior instruction* in a particular area. The importance of macro factors for the outcomes of feedback is postulated by the Counterbalance Hypothesis (Lyster and Mori 2006) and indeed some corrective reactions may be more or less salient to learners depending on the *type of syllabus* (e.g. structural vs. task-based) and the *predominant methodology* applied (e.g. meaning-focused or code-based) (see Sect. 2.4.1.3 in Chap. 2). As for micro factors, it has been pointed out on several occasions throughout this book that the focus of a particular task plays a pivotal role in deciding whether, what, when and how to correct, and feedback is likely to be more effective if it is an integral part of *carefully planned instructional sequences* rather than random, erratic and inconsistent (see Sects. 3.2. and 3.4 in Chap. 3). Also germane to the discussion of contextual variables are issues implicated in *group dynamics* (cf. Dörnyei and Murphy 2003), or the relationships between group members which are the artifact of the composition, size, character and purpose of that group, and influence the extent to which learners are willing to assist, cooperate with, and support each other. It is reasonable to assume, for example, that learners are likely to be more receptive to CF and more willing to incorporate it if they perceive the correction, whether it comes from the teacher or a peer, as a manifestation of lending a helping hand rather than a display of mockery (cf. Morris and Tarone 2003). Although this line of inquiry holds great promise, research into the impact of macro and micro factors on the contribution of corrective feedback is still in its infancy, as reflected in the fact that the pertinent studies are few and far between.

What should also be emphasized at this point is that individual, linguistic and contextual variables are bound to be intricately intertwined in their mediating impact on the effectiveness of different corrective moves. To give an example, a highly motivated student is very likely to be willing to pay attention to feedback, but, owing to the limited working memory capacity, he or she may be able to do so successfully primarily in the case of relatively easy features when trying to communicate genuine meanings and messages. With more difficult language forms, however, he or she may only be able to fully benefit from correction when it takes place in accuracy-based, text-manipulation activities and is assisted by metalinguistic information. Things might of course become even more complex when the learner is an extraverted, shy, field-dependent individual and his or her rapport with some of the members of the class is far from perfect. The existence of such inextricable connections is acknowledged by Ellis (2010b, p. 341), who remarks that "[c]ontextual factors interact with individual difference factors", and provides the following exemplification of this interaction: "The extent of a learner's language anxiety will vary depending on contextual factors such as the learner's relationship with the teacher or other learners in the class and the degree to which they feel they are being evaluated in specific activities". The interplay of various moderating factors in determining the contributions of correction is also recognized by the proponents of Sociocultural Theory (e.g. Lantolf 2006; Lantolf and Thorne 2007), who argue that learners should be provided with feedback that falls within

their zone of proximal development (see Sect. 2.4.1.7 in Chap. 2). Clearly, such feedback should be constantly adjusted to learners and carefully tailored to their needs, taking into account their individual profiles, the characteristics of the structure containing the error and the situation in which the intervention takes place, as illustrated by the studies conducted by Aljaafreh and Lantolf (1994) or Nassaji and Swain (2000).

4.2.3 Learner Engagement

The decision connected with the type of feedback alongside the moderating individual, linguistic and contextual variables jointly influence *learners' engagement*, defined as their response to the reactive negative evidence they are supplied with. According to Ellis (2010b), this response can be interpreted from three distinct perspectives: (1) *a behavioral perspective*, where the main concern lies with whether and in what manner learners attempt to incorporate the accurate form into their subsequent speech or writing, or modify their oral or written output in reaction to a prompt or indirect indication of an error, (2) *a cognitive perspective*, in which case the focus is on whether learners attend to, notice and understand in the right way the negative evidence encoded in the corrective move, and (3) *an affective perspective*, which is connected with learners' attitudes towards the fact that they are being corrected as well as the type of corrective feedback employed.

As regards the behavioral response, it lends itself easily to inspection as it quite openly manifests itself in what learners do with the feedback provided, either in terms of immediate modifications of oral output or revisions of the same texts. Although such adjustments have been the focus of numerous studies of both oral (e.g. Panova and Lyster 2002; Sheen 2004; McDonough and Mackey 2006; Sheen 2006) and written (e.g. Ashwell 2000; Ferris and Roberts 2001; Chandler 2003; Ferris 2006) error correction, some of which will be reviewed in the following sections, there is an ongoing debate as to the role of such uptake. This is because some researchers (e.g. Long 2007) claim that it is of little relevance to acquisition as it depends in the main on the quality of input contained in the corrective move and the occurrence of self-correction, and often fails to trigger long-term interlanguage change, while others (e.g. Lyster 2004) are convinced that output modifications following prompts ensure greater control over partially acquired linguistic features, or, to use the crutch of Skill-Learning Theory (DeKeyser 1998), contribute to the automatization of implicit knowledge (see also Sect. 2.4.1.5 in Chap. 2). The cognitive response, in turn, is more difficult to register because learners' thought processes are necessarily hidden from plain view, and, in fact, even when the student reacts to a corrective move in behavioral terms, we cannot be sure whether he or she simply parrots the correct form, chooses to say anything just to placate the teacher, interprets the correction as a comment on content rather than form (i.e. positive evidence), or indeed pays attention to it as negative evidence, which leads to cognitive comparisons, noticing gaps and holes, or rehearsal (cf.

Doughty 2001; Schmidt 2001). In order to determine whether such benefits really accrue, it is indispensible to rely on data collection tools allowing introspection or retrospection, a practice that is becoming more and more common in research on oral (e.g. McDonough and Mackay 2006; Egi 2007; Kim and Han 2007; Egi 2010; Yang and Lyster 2010) and written (e.g. Adams 2003; Sachs and Polio 2007; Sachs and Suh 2007; Storch and Wigglesworth 2010) correction. Our knowledge is the most limited with respect to the last type of engagement with feedback, namely affective response, which, in the words of Ellis (2010b, p. 344), "(…) is somewhat surprising given that one of the objections sometimes leveled against CF is that it creates anxiety in learners and thus interferes with acquisition". There is a marked paucity of empirical investigations in this important domain, a noteworthy exception being a recent study of written correction carried out by Storch and Wigglesworth (2010).

4.2.4 Learning Outcomes

The vital question in research exploring the contribution of any type of FFI pertains to the effect of the instructional techniques and procedures employed on learners' ability to retain the targeted features and use them successfully in subsequent tasks, which could be taken as evidence of acquisition. Clearly, the provision of feedback on errors in speech and writing is no exception to this rule and hence the inclusion in Fig. 4.1 of the component of *learning outcomes*, which is envisaged as the final product of the combined effect of the corrective move, moderating variables and learner engagement. A major problem arises, however, when it comes to providing a precise definition of acquisition as well as deciding on how and when learning outcomes should be measured. As can be seen from SLA literature (e.g. Ellis 2006c; Gass and Selinker 2008), acquisition can be defined in at least three distinct ways: (1) the emergence of an entirely new linguistic feature in learner output, (2) increased accuracy with which partially acquired language forms are produced, or (3) progress along the sequence composed of developmental stages that have been identified by researchers in the acquisition of many aspects of grammar (e.g. past tense, interrogatives, negatives, word order).

Much also depends on the way in which the use of the targeted form is operationalized, or, more precisely, on whether the measurement involves reliance upon tasks which require *metalinguistic judgment*, *selected responses*, *constrained constructed responses*, or *free constructed response* (cf. Norris and Ortega 2000; Doughty 2003). Obviously, such tasks place quite disparate demands on learners in terms of the amount of time available and thus the application of controlled or automatic processing, the degree of access to consciously held rules, or the need to produce the structures involved or merely to recognize and comprehend them, perhaps attending to form-meaning mappings. This, in turn, will determine whether the outcome measures mainly tap the productive and receptive dimensions of explicit or implicit knowledge, with the first of these conceivably constituting a

true reflection of learners' ability in a foreign language (see Sect. 3.2 in Chap. 3). Although Ellis and his collaborators (e.g. Ellis 2005b, 2009b; Erlam 2009; Loewen 2009) have come up in recent years with a battery of tests that can be used to tap the two types of representation, it can reasonably be argued that it is measures of *free production*, such as *focused-communication tasks* (cf. Ellis 2003), that provide the most valid insights into implicit linguistic competence. This point is in fact emphasized by Ellis (2001, p. 35) himself, who argues that "(…) until FFI studies, as a matter of routine, include some measure of learners' ability to process a structure under real operating conditions (as in spontaneous speech), doubts will remain about the nature of the reported instructional effects". An equally important consideration is the issue of the *timing of the measurement* since, as was pointed out earlier in this section, improvement taking place immediately after the provision of corrective feedback, manifesting itself, for example, in the occurrence of uptake and repair or subsequent revisions of written texts, cannot be taken as evidence that the treatment gains will be carried over into future tasks. For this reason, it is of pivotal importance to include not only immediate but also delayed measures of acquisition, as only in this way is it possible to determine the permanence of the effects of the intervention (cf. Norris and Ortega 2000; Ellis 2001; Norris and Ortega 2001, 2003).

These general principles have not always been complied with in research into the effects of corrective feedback, and in fact essential differences exist in this respect between research studies of oral and written correction. Ellis (2010b) explains that researchers shy away from adopting the use of entirely new linguistic features as a criterion for acquisition (1 above), due to the immense, perhaps even insurmountable, difficulty in the unequivocal identification of such features. Instead, empirical investigations into oral and written feedback have typically relied on various *measures of accuracy* as evidence of mastery of the targeted language forms (2 above), with the caveat that some of the former have also examined the *movement along the developmental stages* (3 above) for that purpose (e.g. Mackey and Philp 1998). There are fundamental differences, however, in how accuracy of use has been operationalized in various research projects because not all of them have included tasks necessitating free production, a limitation that is arguably much more serious in the case of studies of oral correction, which has been hypothesized to contribute more or less directly to implicit knowledge, than in the case of research into written feedback, which can be assumed to mainly affect the growth of explicit knowledge (see Sect. 3.2. in Chap. 3). Although the situation is beginning to change, research into oral and written correction also differs with respect to the timing of measurement of learning outcomes, which is a direct corollary of the fact that the former is strongly grounded in SLA theory and research, and the latter is preoccupied with how error treatment contributes to overall growth of the ability to compose texts (cf. Sheen 2010a). To be more precise, studies of oral feedback have undergone a dramatic transformation from the focus on the immediate uptake of a multitude of language forms to the long-term effect on the acquisition of specific linguistic features, which has also necessitated the adoption of quasi-experimental and experimental pretest–posttest designs.

By contrast, such changes have been much less rapid and pervasive in the case of research into written error treatment, the bulk of which continues to assess the effectiveness of the intervention in terms of revisions introduced into the original texts (cf. Ferris 2010). The scope and consequences of these differences will become even more apparent in the overview of the most significant findings of research into oral and written CF, which will be the central theme of the remainder of the present chapter.

4.3 Research into Oral Error Correction

Commenting on the differences in the aims of empirical investigations into oral and written correction, Sheen (2010c, p. 204) writes that "(…) SLA researchers have been largely concerned with whether CF has any impact on interlanguage development (…) or on improvement in linguistic accuracy (…)". Indeed, as was pointed out in the preceding section and as has been illustrated on many occasions throughout this book, the study of the effects of different types of corrective feedback on inaccurate spoken language production has always been to a greater or lesser extent informed by and reflective of the dominant theoretical positions and the latest research findings. This is evident, for example, in the discussion of corrective feedback in the context of the debate over the role of positive and negative evidence in language acquisition (see Sect. 2.2 in Chap. 2), the justification for correction emanating from Schmidt's (1990, 1995) Noticing Hypothesis, the controversy over the value of input-based and output-oriented corrective moves that can be linked with the claims of Long's (1996) Interaction Hypothesis and Swain's (1995) Output Hypothesis, arguments for the provision of feedback during performance under real-operating conditions stemming from Skill-Learning Theory (DeKeyser 1998), or the need to adjust corrective moves to the zone of proximal development of the learner, as postulated by Sociocultural Theory (Lantolf 2006).

Generally speaking, then, research into oral error correction has gone hand in hand with the study of form-focused instruction, which, in turn, has been motivated by latest theoretical developments. This is not to say, of course, that studies of oral corrective feedback have not been undertaken in response to pedagogic concerns, because they obviously have, as superbly demonstrated by Lyster and Saito (2010), but, rather, that what and how has been examined has been reflective of contemporary developments in the field of second language acquisition. Given such interdependence, it is hardly surprising that research into oral error correction has been subject to far-reaching modifications in terms of its goals, foci and methodology applied. The present section aims to give justice to this consequential evolution, as well as to provide a comprehensive overview of the available research findings, highlight the areas that have been inadequately explored or entirely overlooked, thus being in urgent need of empirical work, and point to the limitations in research design. To this end, methodological issues involved in investigations into oral error correction will be outlined at the outset, which will be followed by the discussion of

the relevant empirical evidence with respect to the components included in the framework presented in Fig. 4.1, that is the types of corrective feedback, the impact of mediating variables and the character of learner engagement, with learning outcomes being pertinent to all the three. It should also be made plain that although the present synthesis is intended to be exhaustive and illuminating, it does not aspire to take into account every single study conducted in this area, a task that would be doomed to failure in this limited space given the sheer multiplicity and diversity of such research, but, rather, to illustrate the most prominent developments and trends. Another qualification is that the overview primarily focuses upon feedback provided in the course of fluency-oriented tasks, as this has been the main thrust of this research.[2] In addition, it by and large ignores most studies in which error treatment was just one among many instructional treatments, it does not make a formal distinction between classroom-based and laboratory-based studies, and it also draws on the findings of empirical investigations of correction during synchronous computer-mediated communication whenever they are regarded as relevant to the discussion.

4.3.1 Issues in Research Methodology

As pointed out earlier in this chapter, the methodology of research on the effects of different types of oral error correction has evolved over the last decade from mainly descriptive studies of naturally occurring classroom interaction to quasi-experimental and experimental studies which might include additional variables and often draw upon multiple data collection tools. An important caveat, however, is that the description of how feedback is implemented in the classroom as well as the examination of its immediate effects have never been abandoned, and may in some situations constitute an invaluable source of data when used in combination with more rigorous experimental designs. Also of great significance to the development of the field are research syntheses and meta-analyses of studies of corrective feedback, the stimulus for which came without fail from the seminal review of this kind which Norris and Ortega (2000) undertook with respect to the effectiveness of form-focused instruction.

4.3.1.1 Descriptive Studies

Descriptive studies of feedback following incorrect oral output, such as those conducted by Lyster and Spada (1997), Lyster (1998b), Havranek (2002), Panova and Lyster (2002), Sheen (2004), Tseng (2004), or Lyster and Mori (2006), share a

[2] Truth be told, the distinction between fluency-oriented and accuracy-based activities would be rather difficult to maintain in the present discussion on account of the fact that the types of interaction during which CF was provided in particular studies are sometimes difficult to pinpoint and they in most cases fall somewhere in between relatively free communication and the performance of code-related activities.

number of features with the broader category of empirical investigations into incidental focus on form (e.g. Ellis, Basturkmen and Loewen 2001; Loewen 2004, 2005; Pawlak 2005a), which, however, are aimed to examine both preemptive and reactive ways of drawing learners' attention to the target language forms which have been erroneously used or might potentially lead to an error (see Sect. 1.6.1. in Chap. 1).[3] A typical descriptive research project involves *audio-* or *video-recording* a respectable number of language lessons or segments of such lessons with a view to obtaining extensive samples of *naturally occurring classroom discourse*, with the important caveat that the exchanges should primarily be *communicative and interactive in nature* (e.g. whole-class discussions, decision-making tasks, role plays) rather than mainly code-based. Such samples, which are in most cases many hours in length, are subsequently transcribed and subjected to quantitative and qualitative analyses, often with the help of field notes or *coding schemes* such as Spada and Fröhlich's (1995) Communicative Orientation of Language Teaching (COLT), completed during actual classes and aiding the interpretations of stretches of discourse.[4] The obvious consequence of a design of this kind is that the focus of error treatment is on multiple TL forms, with the outcome that the correction can be described as unfocused, unplanned and extensive (see Sects. 1.6.1. in Chap. 1 and 3.5.3. in Chap. 3, for discussion).

The main unit of analysis is what is labeled the *error treatment sequence*, developed by Lyster and Ranta (1997) and adapted for the purpose of subsequent research projects carried out in a variety of settings (i.e. immersion, second and foreign language, content classrooms). The sequence is initiated with a learner utterance containing one or more erroneous language forms which can be coded as grammatical, phonological and lexical,[5] a procedure that can pose a formidable challenge in itself in some situations. Two courses of action are possible at this juncture: (1) the error can go unnoticed or simply be ignored for one reason or another, in which case topic continuation moves initiated by the teacher or other learners may follow (e.g. a request for more information about what the learner has said), and (2) the teacher elects to provide feedback on the error. Although there might be differences between studies, such correction is considered in terms of the types of feedback moves described by Lyster and

[3] The direct consequence of the broader focus of research into incidental focus on form is reliance on a different unit of analysis than that typically employed in studies of oral corrective feedback. This is usually a *focus on formepisode* (FFE), "(…) which includes all discourse pertaining to the specific linguistic structure that is the focus of attention" (Loewen 2003, p. 318). This allows researchers to investigate not only reactive (i.e. error correction) but also preemptive (i.e. before an error is made) focus on form.

[4] A brief description of this coding scheme, based on Allen et al. (1984), can be found in note 10 in Chap. 2.

[5] It should be pointed out that in the studies conducted by Lyster and Ranta (1997) and Lyster (1998b), an additional category of unsolicited uses of the first language was included, which, of course, cannot be treated as errors *per se*, but may be regarded and responded to as such by many teachers.

Ranta (1997), that is explicit correction, recasts, elicitation, metalinguistic clues, clarification requests and repetition, with the last four falling into the category of negotiation of form or prompting (see Sect. 3.5.4.1 in Chap. 3) and often being analyzed jointly in recent empirical investigations (e.g. Lyster and Mori 2006).

Irrespective of the exact form that the correction may assume, it can be followed, yet again, by topic continuation, when the learner fails to notice the signal, misinterprets it as positive evidence or takes no heed of it because he or she does not know how to remedy the problem, or an attempt at *uptake*, defined as "(…) a student utterance that immediately follows the teacher's feedback and that constitutes a reaction in some way to the teacher's intention to draw attention to some aspect of the student's initial utterance" (Lyster and Ranta 1997, p. 49). As can be seen from Table 4.1, uptake is subdivided into *repair* and *needs repair*, depending on whether the inaccurate form is eliminated from the original utterance. In the former case, the learner may repeat the correct version or include it in a longer utterance, an option that is only feasible in reaction to explicit correction or a recast, or self-correction or peer correction may take place, following a prompt from the teacher. Such successful repair may be immediately followed by topic continuation or some sign of verbal or/and non-verbal approval from the instructor (e.g. phrases such as 'Good' or 'Well done' and a smile, or the nod of a head) together with an invitation to carry on speaking. As regards the category of needs repair, the learner responds to the corrective move but he or she fails to successfully fix the incorrect utterance, which can involve mere recognition of the problem, commission of the same or different error, an attempt to shift the focus to a different linguistic item, silence, or incomplete repair. In such situations, the

Table 4.1 Types of uptake in response to corrective feedback (based on Lyster and Ranta 1997; Lyster 1998b; Lyster and Mori 2006; Ellis 2008)

Repair
1. Repetition (i.e. the student repeats the feedback provided by the teacher)
2. Incorporation (i.e. the learner incorporates the repetition of the correct form in a longer utterance)
3. Self-repair (i.e. the learner corrects the error in response to a corrective move that did not supply the correct form)
4. Peer-repair (i.e. a student other than the one who produced the inaccurate form performs the correction in response to the feedback offered by the teacher)
Needs repair
1. Acknowledgement (i.e. a student says 'yes' or 'no')
2. Same error (i.e. the learner produces the same error one more time)
3. Different error (i.e. the learner fails to correct the original error and in addition produces yet another inaccurate form)
4. Off target (i.e. the student responds by circumventing the teacher's linguistic focus, which might involve modifying a different part of the utterance)
5. Hesitation (i.e. the student hesitates in response to the feedback)
6. Partial repair (i.e. the learner only partly corrects the initial error)

teacher can opt for one more corrective move, in which case the error correction cycle is continued, or allows further elaboration of the topic.

Once the collected data have been coded in these ways, it is possible to analyze them in different ways, drawing upon both *quantitative* and *qualitative procedures*. Researchers might, for instance, tabulate the numbers and percentages of errors, the tokens and percentages of the different types of feedback together with their distribution across various error categories, as well as the numbers and percentages of different types of uptake alongside their distribution across both types of errors and corrective moves, relying for this purpose on both *descriptive* and *inferential statistics*. In addition, they might complement such numerical analyses with in-depth examination of feedback sequences in search of recurring patterns, relate their nature to a particular segment of classroom interaction in terms of its goals, types of activity, the roles of teachers and students or modes of classroom organization, or enhance their interpretation and understanding with the help of insights obtained from field notes or coding schemes.

A somewhat prototypical example of descriptive research into oral corrective feedback is the study conducted by Panova and Lyster (2002, p. 578), who set out to "(…) examine the error treatment patterns, involving the relationship between feedback types and how learners respond to them, in an adult ESL classroom. (…) [and] to ascertain whether Lyster and Ranta's (1997) model of corrective discourse is applicable in a different instructional context". They audio-recorded and observed 18 h of interaction in a class of 25 adult learners of English as a second language over the period of 3 weeks, also using field notes and the COLT coding scheme. This allowed them to identify stretches of discourse which were devoted to the performance of communicative activities and ultimately produce a database of 10 h of recorded classroom interaction which was then transcribed and subjected to analysis. Following Lyster and Ranta's study (1997), the analysis involved pinpointing all the error treatment sequences and coding them in accordance with types of learner errors, types of corrective moves employed by the teacher, and turns in which uptake comprised successful repair or lack thereof (i.e. needs-repair). The categories in all of these cases were identical to those used in the previous study, the only difference lying in the fact that Panova and Lyster (2002) isolated an additional feedback strategy in the form of *translation*, on the grounds that, while Lyster and Ranta (1997) conflated such moves with recasts, "[t]here is nevertheless a relevant difference between a recast (a response to an ill-formed utterance in the L2) and a translation (a response to a well-formed utterance in the L1)" (2002, p. 583).[6] Leaving aside the detailed findings of this study which will be referred to in the section dealing with the effects of different feedback options, it largely confirmed the outcomes reported by Lyster and Ranta

[6] Panova and Lyster (2002, p. 590) also included in their analysis "(…) a type of clarification request that focused on the literal, unintended meaning of learner utterance". Even though this as well constitutes departure from the analytical framework used by Lyster in Ranta (1997), it does not entail the need to introduce an entirely new category.

(1997), and led Panova and Lyster (2002, p. 590) to draw the conclusion that the "(…) model and its categories proved to be applicable in the present study, only with minor revisions".

4.3.1.2 Descriptive Studies Including Individualized Posttests

The study by Panova and Lyster (2002) as well as other descriptive research projects suffer from a glaring limitation, which is connected with the fact that uptake consisting of successful repair, whether this means merely repeating the correct form provided by the teacher or in fact self-correcting the error, cannot constitute ample evidence for interlanguage restructuring and the acquisition of the targeted form, a problem that has been highlighted on several occasions in the present work (see Sect. 2.3 in Chap. 2 and comments in the preceding section). Drawing on the findings and claims of other scholars, such as Mackey and Philp (1998), Ohta (2000), Nabei and Swain (2002), or Ellis and Sheen (2006), Nassaji (2009, p. 417) comments on the dangers of excessive reliance on the occurrence of uptake in the following way:

> The occurrence of uptake may simply be due to the mechanical repetition of the teacher's feedback (…). In such cases, uptake may indicate that the learners have noticed the feedback, but it does not indicate that they have learned from it or even processed it (…). The reverse might be true too. It is possible that the learners have learned from the feedback but that they have not responded to it or have not modified their responses after feedback.

Given these limitations, attempts have been made to design tools which would allow the investigation of the link between successful uptake and long-term acquisition in the hope that, if the existence of such a link could be demonstrated, it would be possible to offer empirical support for the pedagogic value of incidental, unplanned feedback, or reactive focus on form, postulated by the proponents of the focus on form approach (e.g. Long 1996), on the one hand, and to restore confidence in the results of descriptive studies of how learners' attention is directed at TL features in meaning-focused instruction, on the other (e.g. Williams 2001; Nabei and Swain 2002; Loewen 2005; Nassaji 2009). These attempts led to the modification of the design features of descriptive research projects so that they could include *individualized* or *tailor-made posttests*, which are constructed on the basis of the feedback that particular learners receive in the course of classroom interaction on the forms that they use incorrectly, and subsequently administered to the same learners after the lesson to elicit the production of the problematic features (Loewen 2005; Nassaji 2009).[7] Obviously, the use of such outcome measures does not eliminate the problem of researchers' inability to determine learners' prior knowledge of the linguistic items targeted by correction, with the effect that

[7] Tailor-made tests were used prior to that in what is known as *text-reconstruction activities*, such as those based on the idea of strategic interaction (DiPietro 1994) or those using the dictogloss procedure (Swain 1998).

some of the ill-formed utterances may be reflective of performance errors rather than systematic problems. Still, Loewen (2005) makes three important points with respect to this crucial issue: (1) the commission of an error in and of itself is reflective of the difficulty in using a specific feature (cf. Ellis et al. 2001), (2) the fact that learners experience difficulty in deploying a form in meaningful interaction, which requires the use of TL recourses in online processing and, as such, necessitates reliance on implicit knowledge, testifies to the need for further consolidation of learning, or what DeKeyser (1998, 2007a) might call automatization (cf. Swain 2001), and, as a consequence of the first two, (3) it is possible to operationalize language learning in terms of more accurate use of the forms self-corrected in response to a feedback move, which are elicited some time after the occurrence of correction in classroom discourse (cf. Williams 2001).

Individualized tests can take different forms and involve, for example, *grammaticality judgments* (Nabei and Swain 2002), *asking learners to correct oral utterances* which are read to them (Loewen 2005), or *requesting them to make adjustments to written descriptions* on the basis of the feedback they have received in oral interactions (Nassaji 2009). In addition, such tests can be administered only once after the interaction, thereby serving the role of *immediate posttests*, two or more times, in which case they perform as *immediate and delayed posttests*, and it is also possible to plan the intervention in such a way that they can be used as pretests. For the sake of illuminating how such outcome measures can be incorporated into descriptive studies of oral corrective feedback, it makes sense to provide a brief description of the design of the research projects undertaken by Loewen (2005) and Nassaji (2009).

The former was in fact conducted within the framework of incidental focus of form, but is clearly pertinent to the present discussion because the majority of the coded focus on form episodes (FFEs)[8] involved the provision of feedback. Using the recordings and transcripts of 17 h of classroom interaction during ESL lessons in a private school in New Zealand, he examined the effects that unplanned focus on form has on language learning as well as the characteristics of this intervention that were predictive of development. In order to achieve this goal, he coded FFEs according to a number of criteria, and administered both immediate (1–3 days after the FFE) and delayed (13–15 days after the FFE) tailor-made tests to students who had participated in such exchanges. The individual testing sessions were audio-taped and focused on suppliance, correction and pronunciation, with the first two requiring an oral response to a prompt read by the researcher and the last one involving reading aloud a written item. The responses were scored in accordance with a set of stringent criteria as correct, incorrect, partially correct, other correct, and inconclusive, and care was taken to ensure the reliability and validity of the test instruments. The analysis of the data collected in these ways led Loewen (2005, pp. 383–384) to suggest that "(…) incidental focus on form helps learners improve their linguistic accuracy while they are engaged in meaning-focused L2

[8] See footnote 3 earlier in this section for the definition of FFEs.

lessons" and to conclude that "(…) successful uptake was the best overall predictor of test performance", which augurs well for the validity of descriptive research and shows there is merit to conducting it.[9]

Even more insightful is the study carried out by Nassaji (2009) because it constitutes a successful rebuttal of the harsh criticism of individualized, tailor-made testing evident in Loewen and Philp's (2006, p. 542) remark that "(…) in the absence of pretests, such measures cannot provide information about learners' previous knowledge of the forms and, thus, cannot differentiate between the acquisition of new knowledge and the consolidation of latent knowledge". Even though the main aim of the research project was to investigate the effects of implicit and explicit variants of recasts and elicitations, and its results will be mentioned in the following section, it was also intended to examine whether the effects of such unplanned CF supplied to adult ESL students during dyadic interaction with teachers were sustained over time. In addition to such interactions, which were audio-recorded and transcribed, Nassaji (2009) also included in the research design three other elements: (1) a written pre-interaction description component, (2) an immediate post-interaction error identification/correction component, and (3) a delayed post-interaction error identification/correction component. As the first step, the participants were requested to come up with a written description of an event on the basis of four randomly ordered pictures (1), and then they took part in interactions with the teacher, which were 10–15 min in length, were based on the same set of pictures, and involved the provision of feedback on errors. On completion of the task, the learners were asked to go over their initial descriptions and make modifications in accordance with the feedback they had received when speaking in dyads, with no time constraints imposed (2). The procedure was repeated 2 weeks later but this time the participants were requested to correct the descriptions which included adjustments made right after the dyadic interactions, but, in order to avoid out-of-class study of the problematic forms, they had not been alerted to the nature of this delayed task (3).

This design enabled the researcher to measure the mastery of the linguistic features targeted by correction prior to the treatment (i.e. interaction) and at a later time, and "[t]hus, the design was taken to be similar to the pretest–posttest design" (2009, p. 429). The analysis involved identifying errors that were in common

[9] An interesting reanalysis of these data as well as those procured in the course of earlier studies (e.g. Loewen 2004) is reported by Loewen (2007). Here, in addition to using the individualized test items from Loewen (2005), the researcher also investigated prior and subsequent use of the targeted forms in 4.5 h of classroom interaction with the help of a corpus analysis software program. He found no relationship between correct subsequent use of a specific feature and successful uptake as well as the results of individualized posttests, although he reported that, on the whole, the subjects were less accurate before the occurrence of form-focused episodes than afterwards. In contrast to the study outlined in the text, such findings clearly cast doubt on the significance of uptake as a measure of language learning. This led Loewen (2007, pp. 144–115) to comment that "(…) these findings suggest that studies of uptake should continue to be cautious in interpreting its significance. (…) [and] illustrate the importance of measuring learners' L2 knowledge in a variety of ways".

between the texts written before and after the treatment, which were in addition successfully repaired during interaction in dyads, and entailed assigning the participants' modifications into three groups: successful correction, partially successful correction, and no correction. As was the case with Loewen's (2005) study, this research project also produced evidence that successful uptake of forms receiving feedback, especially such that is explicit, can be linked to subsequent more accurate use of these forms. Nassaji (2009, p. 443), however, openly admits the weaknesses of the testing procedures, pointing out that "(…) individualized tests do not assess learners' knowledge as reliably as pretest-posttest measures commonly used in experimental research (…) because such tests are usually based on one or only a few incidental occurrences of a form".

4.3.1.3 Experimental Studies

The limitations inherent in descriptive studies of oral feedback and the difficulties involved in designing individualized tests with a view to ascertaining that learners have acquired the linguistic features or improved mastery thereof in the long run no longer apply in the case of *experimental* or *quasi-experimental designs*, in which the use of the targeted forms is carefully pretested and posttested using a sufficient number of items.[10] On the other hand, however, it should be made clear that these research projects can only investigate the effects of *focused correction*, or such that is confined to a specific linguistic feature, with the outcome that it is intensive (i.e. the selected item is repeatedly the focus of corrective feedback) and can be meticulously planned in advance (see Sect. 3.5.3. in Chap. 3).

Although experimental studies of correction all share the main features of *confirmatory research*, specifically those connected with the inclusion of *experimental* and *control groups*, *pre-* and *posttesting*, *rigid control of extraneous variables* which might unduly influence the results, and typically also *reliance on inferential statistics* in the analysis of the data (cf. Ellis 2001, 2008), they can also differ along a number of dimensions. As superbly illustrated in the research meta-analyses conducted by Mackey and Goo (2007), Lyster and Saito (2010) and Li (2010), such differences may concern, among others, the broader context in which the study is set (e.g. foreign, second, immersion), the instructional setting in which it takes place (i.e. in the classroom or laboratory), the participants (e.g. age, proficiency level, educational stage), the mode of delivery (i.e. face-to-face or through the computer), the type of task (e.g. the extent to which it focuses on meaning as opposed to form), the targeted linguistic feature (e.g. simple or complex, related to grammar—morphology or syntax, lexis, phonology, or pragmatics), feedback type (e.g. explicit vs. implicit, input-providing versus output-inducing, or combinations

[10] For the sake of convenience, the term *experimental* is used here to refer both to true experiments, or studies conducted in laboratory settings, and *quasi-experiments*, or research projects carried out in real classrooms and using intact learner groups.

and variants of these), the length of the treatment (e.g. short, medium or long, with various criteria being applied), the type of testing instruments utilized (e.g. such that tap into explicit knowledge, implicit knowledge, or both), and the timing of the testing procedures (i.e. only immediate or also delayed posttests). In fact, there exists so much variation in these respects that it would be impossible to give justice in this necessarily succinct overview to the multiplicity of ways in which various aspects of experimental designs have been approached and manipulated in different studies. The situation is complicated even further because many recent empirical investigations include several research foci, they go beyond straightforward comparisons of feedback types, and seek to examine the contribution of mediating variables.

In the light of such problems, the present discussion is limited to the presentation, for illustrative purposes only, of the methodology employed in two experimental studies of oral corrective feedback, those conducted by Ellis, Loewen and Erlam (2006) and Ammar (2008). The choice of these two research projects is motivated by the fact that they were intended to explore the relative effectiveness of implicit and explicit error correction, and input-providing and output-pushing feedback moves, respectively, in teaching second language grammar, thus addressing the two dichotomies that have been accorded the most attention. Yet another reason for the selection is that while one of them explores acquisition at the group level and equates it with the accuracy of use of the targeted feature in production and comprehension, a practice that is predominant in experimental research on oral feedback, the other does so at the level of an individual and examines the effects of the intervention in relation to developmental sequences (see Sect. 4.2.4).

The investigation carried out by Ellis, Loewen and Erlam (2006) focused on the acquisition of the regular English past tense '-ed' ending and it involved three classes of lower intermediate adult ESL learners in New Zealand, arbitrarily divided into two experimental and one control group. While the control group continued with regular activities, the participants in the two treatment conditions had the benefit of instruction, which was 1 h in length, was spread over two consecutive days, and involved completion of two half-hour focused communication tasks performed in triads and necessitating the use of the targeted morpheme (e.g. each triad was given a slightly different version of a narrative based on a sequence of pictures and, upon 5-min planning, the students had to collectively retell the narrative to the class). The treatment in the two experimental groups consisted of immediate feedback on errors involving the use of the regular past tense but it differed in terms of its explicitness. In one group, each inaccurate use of the targeted feature was followed by implicit correction in the form of recasts (e.g. L: '… they saw and they follow follow follow him'—T: 'Followed'—L: 'Followed him and attacked him'), while in the other group explicit feedback was given, operationalized as the repetition of the error and the provision of metalinguistic information (e.g. L: 'He kiss her'—T: 'Kiss—you need past tense'—L: 'He kissed'). The two treatment sessions were audio-recorded and all the instances of errors in the use of the regular past tense as well as feedback on such errors were noted down manually by an observer. A pretest was administered to all the three groups 5 days

before the treatment commenced, and there were also two posttests—one immediate, completed the day after the second treatment session, and one delayed, given 12 days later. The testing instruments used on the three tests were part of the battery of tests designed by Ellis (2005b, 2009b) for the measurement of explicit and implicit linguistic knowledge. They included, in the order listed, an untimed grammaticality judgment test, a metalinguistic knowledge test, and an oral imitation test, the first two of which were meant to reflect the explicit knowledge of the regular past tense ending, and the last one to tap the implicit knowledge of the morpheme.[11] The data collected by means of these tools were subjected to quantitative analysis, which involved calculating descriptive statistics, not only in terms of the total scores, but also separately for grammatical and ungrammatical as well as old and new items, and running *t*-tests and analyses of covariance to check for significance.[12]

Without commenting on the findings of this study, which are not relevant here and will be discussed in the next section, it should be noted that it was characterized by three features that, in the view of Ellis et al. (2006) made it unique, namely: (1) it was the first to compare the effects of online explicit and implicit feedback, operationalized as metalinguistic comments and recasts, in a classroom setting, (2) the correction took place in the context of communicative tasks, and (3) it applied separate outcome measures of implicit and explicit knowledge. The researchers also indicate some important limitations, which may constitute an instructive lesson for future research, related to the small sample size, the use of intact groups which were not equivalent at the outset, failure to include yet another control group that would have performed the communicative tasks without any feedback, and the short duration of the instructional treatment. In addition, the target feature was a structure that had already been partly acquired by the subjects, although this can be regarded both as a weakness and a strength of the research project.

Although the study undertaken by Ammar (2008) is similar in its overall design to the one by Ellis et al. (2006), it also differs from it in a number of significant ways, with the most obvious divergences relating to the selection of the targeted structure and the types of corrective feedback being compared. More specifically, he sought to determine the effects of prompts, as a manifestation of

[11] A detailed description of the construction and scoring of these instruments as well as the others included in the battery is beyond the scope of the present chapter and can be found in the papers included in a recent publication edited by Ellis et al. (2009). The interested reader is also referred to the paper by Mystkowska-Wiertelak (2011), which offers an interesting and instructive critique of the use of oral elicited imitation as a measure of implicit knowledge.

[12] While the total scores provide information about the overall performance of the groups, thus making it possible to draw conclusions about the effectiveness of the two types of correction, the appearance of grammatical and ungrammatical items may reflect reliance on different types of knowledge (i.e. implicit vs. explicit), and the distinction between old and new items allows insights into the extent to which the improvement is the outcome of item or system learning (cf. Ellis 2005b, 2009b).

output-pushing corrective moves, and recasts, as an example of input-providing error correction, on the acquisition of third person possessive determiners (PD, i.e. 'his' and 'her') by francophone learners of English in accordance with the assumption that gender assignment is problematic for this language group (cf. Lightbown and Spada 1990; White 1998). As in Ellis, Loewen and Erlam's (2006) study, the students were assigned to two experimental groups and one control group, but, in contrast to it, all of them participated in one phase of the instruction provided, with only the first two receiving feedback on their errors. The treatment took place over the period of 4 weeks and consisted of two components, the first of which was a PPP sequence in which all the learners took part and which comprised three phases: the provision of a rule of thumb concerning the use of third person determiners, semi-controlled practice in the use of these features (i.e. cloze passages), and more spontaneous use thereof in a one-way information-gap task. As Ammar (2008, pp. 190–191) explains, "[g]iven that prompts cannot be used to elicit forms students do not know already (…), an instruction component in which the PD rule was explained and practiced was deemed necessary. This component was provided to the three groups in order to disentangle its effects from the effects of the experimental variable of interest (i.e. corrective feedback)". In the second component, all the students completed a total of 11 communicative activities, during which those in the first experimental group were provided with recasts when they made an error in the use of the PD (i.e. reformulations with no grammar explanations and no attempt to push learners to self-correct), those in the second were supplied with prompts (i.e. elicitations, repetitions or metalinguistic clues requiring self-correcting, with the correct form never being given by the teacher), while those in the control group received no feedback.

The data were collected on the pretest, 2 days before the start of the treatment, an immediate posttest, right after the end of the intervention, and a delayed posttest 30 days later. In order to ensure that the treatment conditions were implemented as intended, the researcher organized a briefing session for the participating teachers, appropriate instructional packages were prepared, and the teachers were requested to provide feedback in a way compatible with their teaching styles, as determined by means of the COLT. The outcome measures included a computerized fill-in-the-blank test (i.e. sentences completed on the basis of drawings), which was administered only on the pretest and the immediate posttest due to time constraints, and an oral picture description task (i.e. the learners were asked to describe what was happening to girls and boys in a series of six pictures), which, for the same reasons, could not be completed by all the students on the delayed posttest. A crucial difference between this study and the one by Ellis et al. (2006) was that, rather than focus on comparing the scores of the three groups, Ammar (2008) looked into the performance of individual participants.[13] When it comes the oral task, this involved examining the audio-recordings in terms of the

[13] The results concerning the performance of the whole groups are reported in an earlier paper by Ammar and Spada (2006), which is referred to in the following section as part of the discussion of research into the effects of input-providing and output-prompting oral error correction.

developmental stages in the acquisition of possessive determiners manifested by the students and assigning them to the categories of pre-emergence, emergence and post-emergence (cf. White 1998), with their progression along the sequence also being analyzed in relation to their proficiency level.[14] As for the computerized test, the data from the students with the accuracy rate of 90 % or higher on the pre-test were analyzed with respect to the mean reaction time in order to explore the effects of corrective feedback on the speed of access. Ammar (2009, p. 195) also availed himself of an analysis by coefficient of variability (CV), which allowed him to "(…) determine the extent to which the change in latency scores reflected a qualitative change (i.e. automatization or proceduralization)". Reserving the discussion of the results until later in this chapter, suffice it to say at this point that the research procedures proved to be effective in that they allowed evaluation of the role of the two types of feedback under investigation in driving interlanguage development. Ammar (2008) concedes, however, that the findings could have been impacted by the choice of the targeted form, which was easy, and thus more likely to benefit from more explicit techniques such as prompts.

4.3.1.4 Research into Mediating Variables

The investigation of the mediating effects of individual, linguistic and contextual factors on the effects of different types of corrective feedback, whether in isolation or in comparison with others, has been incorporated into both descriptive and experimental research designs, or in some cases research projects that are an amalgam of the two, and thus it cannot be said to be the exclusive domain of either. Moreover, it is impossible to talk here about typical empirical procedures because studies of this kind may come in all shapes and sizes on account of the fact that the nature of the variables in question sometimes requires quite disparate decisions about the setting in which the study is conducted, the choice of the participants, the number of experimental and control groups, the type and character of the instructional treatment, the data that need to be gathered, the inclusion of specific outcome measures, as well as the kinds of analyses applied. For instance, the examination of the potential impact of various individual difference factors necessitates the use of different forms of *introspection* and *retrospection*, with many data collection instruments being highly specific to the facet under investigation (e.g. aptitude, motivation, personality, strategies, styles). The investigation of the moderating role of linguistic factors (e.g. the complexity of the targeted feature), in turn, usually calls for creating a greater number of groups or designing more *elaborate research setups* in which the experimental groups receive a series of treatments involving pedagogic interventions targeting the structures in question. Finally, the exploration of the mediating effects of context, whether regarded from

[14] The scale is a simplified version of the sequence of eight developmental stages originally proposed by Zobl (1984).

the macro perspective or the micro perspective, requires *comparisons between different settings and situations*, which can be conducted within the framework of descriptive research, experimental research, or a combination of both. Since this plethora of dimensions precludes the possibility of providing one or two examples of studies that could be viewed as characteristic of this line of inquiry in terms of research methodology, the focus here will only be limited to necessarily brief descriptions of selected empirical investigations. These are studies conducted by Sheen (2008), Mackey et al. (2010), Ellis (2007) and Oliver and Mackey (2003), the first two of which tap the impact of individual variables, the third the influence of structure type, and the fourth the role of contextual micro factors.

Sheen's (2008) study zoomed in on the moderating effects of foreign language anxiety and had the dual goal of determining whether this ID factor influences the accuracy of use of English articles in response to corrective feedback in the form of recasts and whether it exerts an impact on the incidence of output modifications following this type of error correction. In order to answer the research questions, Sheen (2008) used a classroom anxiety questionnaire based on the previous work by Dörnyei and MacIntyre (2006), which allowed him to divide the participants, university-level ESL learners, into those exhibiting high and low levels of anxiety, with each of the two samples being further subdivided into experimental and control groups.[15] The instructional treatment in the experimental groups, which formed intact classes, took place over the period of 2 weeks and involved the completion in small groups of two 30-min narrative tasks and whole-class reconstruction of the story, in the course of which errors involving the use of articles were corrected by the teacher by means of recasts. The two sessions were audio-recorded and observations sheets were used to record information about the order in which the students participated in the activity as a way of distinguishing between the high- and low-anxiety students within each group. The data on the accuracy of use of the targeted structures were collected on pretests, immediate, and delayed posttests, each of which included tests involving speeded dictation, writing and error correction, adapted from studies by Muranoi (2000), Butler (2002), and Liu and Gleason (2002). In addition to scoring these tests and comparing the results of high- and low-anxiety students through statistical procedures, the analysis involved tabulating the frequencies of recasts, output modifications and repair moves in the transcriptions of the treatment sessions with the purpose of exploring the impact of the explored ID variable. The main strength of the study is that, apart from being one of the first to investigate the mediating effect of anxiety on the effectiveness of feedback, it managed to successfully combine the process and product components, looking at both immediate uptake and repair, and

[15] The students were divided into the high-anxiety group and low-anxiety group taking into account the total mean score and standard deviation. More precisely, those who scored one standard deviation above the mean were considered to manifest high anxiety levels and those who scored one standard deviation below the mean were regarded as displaying low anxiety levels. The participants who scored between the two values were excluded from the analysis.

long-term learning outcomes. As Sheen (2008) admits, its limitations are related to the short duration of the intervention, its focus on only two functions of articles, the undifferentiated view of anxiety as measured by the questionnaire used, and a lack of an oral production task that could have tapped the participants' implicit knowledge.

Although the research project conducted by Mackey et al. (2010) also focused upon the impact on individual variables, it differs from Sheen's (2008) study in two critical respects, namely: (1) it examines the immediate responses to feedback, which makes it descriptive or, to be more precise, correlational in nature, and (2) it explores the effect of a cognitive factor, which is working memory (WM) capacity, a facet that has recently come to be regarded as a crucial aspect of foreign language aptitude (cf. DeKeyser and Koeth 2011). The hypotheses they set out to test was that learners endowed with higher WM capacity would produce more instances of modified output in response to CF than those with lower WM capacity. The participants, American undergraduates learning Spanish, were first requested to complete a verbal working memory span test in their L1 (e.g. Daneman and Carpenter 1980; Waters and Caplan 1996),[16] and then to take part in four interactive tasks (i.e. a map task, a picture drawing task, a spot-the-difference task and a story completion task) with native speakers of Spanish, in which the errors they committed were corrected by means of output-pushing prompts. Since the tasks were not intended to elicit the use of any specific TL feature (i.e. they were unfocused), Mackey et al. (2010, p. 514) state that "(…) prompts for modified output were automatically tailored to a learner's individual development level in relation to the form(s) with which they were having problems". The recorded and transcribed interaction data were coded, first, for opportunities for output modifications and, second, for verbal responses to CF, which could involve complete or partial repetition of the corrective move, adjustments of the erroneous utterances towards or away from the TL norm, and just acknowledgement of the correction, with only the first two being considered evidence of uptake. These data served as a basis for calculating proportional scores for each learner which were used to determine the relationship with working memory scores by means of a simple linear regression analysis. The participants were also requested to fill out an exit questionnaire concerning their awareness of the goals of the study that supplied data for qualitative analysis. Setting the exact findings of the study aside for the discussion later in this chapter, it should be emphasized that its design made it possible to relate the concept of feedback, uptake and repair to what is now viewed as a key component of aptitude, thereby shedding new light on the interfaces between correction and individual variation. The limitations are that working memory is unlikely to be the sole predictor of modified output, there are doubts

[16] As Dörnyei (2005, p. 57) writes, the working memory span is "(…) a robust predictor of a wide range of complex cognitive skills and it is highly correlated with performance on the type of reasoning tasks that underpin standard tests of intelligence". The test is used to measure processing and storage of information in a dynamic and simultaneous way.

concerning the value of span tests, only output-prompting corrective moves were considered, measures of long-term learning outcomes were not included, and the research was laboratory-based.

The classroom-based study conducted by Ellis (2007) contributes to our understanding of the effectiveness of oral error correction as a function of the linguistic feature which is the focus of pedagogic intervention, as it explored the impact of explicit and implicit feedback on the acquisition of the English regular past tense '-ed' ending and the English comparative, the latter of which can be regarded as posing a slightly greater learning challenge.[17] A quasi-experimental design was used in which the participants, adult ESL learners in New Zealand, were divided into two experimental groups and a control group, in which regular instruction was provided. The students in the experimental groups received treatment on the two targeted features, first on the comparative and later on the '-ed' ending in one group, and the other way around in the other, with each lasting approximately an hour and involving the performance of communicative tasks (e.g. a narrated story for the past tense, and an activity in which learners completed sentences about men and women for the comparative). As the activities were in progress, the subjects had their errors in the use of the targeted features corrected by means of metalinguistic feedback or recasts, with a different feedback type being supplied for each of the two structures.[18] The mastery of the targeted features was assessed on pretests, immediate and delayed posttests, which consisted of measures of both implicit knowledge (i.e. untimed grammaticality judgment and elicited oral imitation tests) and explicit knowledge (i.e. a test of metalinguistic knowledge). Applying complex statistical procedures (i.e. a split plot analysis of variance, or SPANOVA), Ellis (2007, p. 360) was able to tease apart to some extent the intricate relationships between feedback type and the inherent characteristics of the structures taught, which led him to the conclusion that: "[w]hat is needed is further research to help us identify how linguistic factors determine when different kinds of feedback will work for acquisition".

The empirical investigation undertaken by Oliver and Mackey (2003) was aimed to shed light on the impact of contextual variables on the occurrence and outcomes of oral CF during naturally occurring classroom interaction. This descriptive, data-driven study involved child ESL learners in Australia and focused in particular upon what was referred to above as micro factors by investigating the role of the activities in which teachers and students were engaged at particular points in a lesson. Video-recordings of 4.5 h of classroom interaction in four classes were made over the period of 14 weeks, on the basis of which it was possible to create detailed transcripts of 150 exchanges between teachers

[17] Ellis (2007) discusses the difficulty involved in the acquisition of these two features with respect to such criteria as grammatical domain, input frequency, learnability, explicit knowledge, reliability, scope, formal semantic redundancy, and experts' opinions.

[18] The feedback was provided in exactly the same way as in the study conducted by Ellis et al. (2006) reported above. The testing instruments were also identical.

and learners which could be utilized in the analyses. The three-part exchanges, which comprised the initial utterance produced by a learner, the teacher's response to such an utterance and the learner's reaction to this response, were subsequently coded for the occurrence of inaccurate forms, and the presence or absence of correction. When error treatment in fact took place, it was coded for whether it involved explicit correction, a recast, or negotiation of form, whether it allowed output modification, and whether learners used these opportunities to adjust their ill-formed utterances. Using the transcripts and the COLT observation scheme, the researchers also identified four types of context, depending on the primary focus of such exchanges, which were related to: (1) content (i.e. imparting knowledge or eliciting information from learners), (2) management (i.e. discussing organizational matters), (3) communication (i.e. engaging the class in interactive use of language), and (4) explicit language-focused (i.e. discussing the use of TL subsystems, often with the assistance of metalanguage). Subsequently, the relationship between the provision, type and consequences of corrective moves in relation to uptake and the four categories of exchanges was established with the aid of descriptive statistics and *Chi* square analyses. The strength of the study lies in the fact that it constitutes a rare attempt to offer insights into how what transpires in classroom interaction at a particular moment, might, in ways that are difficult to predict, determine the provision and effects of correction, with far-reaching ramifications for possible interpretations of experimental studies. Oliver and Mackey (2003) admit that the research design did not permit investigating the impact of contextual factors on language development, an inevitable woe of any descriptive study, the sample was small, the findings are limited to whole class exchanges, and the operationalization of context was rather simplistic.

4.3.1.5 Research into Learner Engagement

Finally, some comments are in order on the methodology of research striving to provide data on the nature of learners' engagement with error correction, which constitutes the second last component of the framework discussed in Sect. 4.2. The present discussion, however, is mainly restricted to studies devoted to capturing the cognitive response in view of the fact that the ways of investigating the behavioral response have already been outlined in the context of descriptive research and the affective response has not thus far been subject to investigation in the case of oral feedback. As pointed out above, examining learners' attention to and noticing of the corrective moves they receive requires falling back upon additional data collection tools which allow insights into thought processes in the form of *introspection* and *retrospection*. It could involve, for example, the use of *stimulated recall interviews* where students are asked to comment on the correction episodes in which they participated and which are presented to them as audio- or video-recordings of their interactions (e.g. Mackey 2006a; Egi 2007, 2010; Yoshida 2010; Bao et al. 2011). Digitized clips of this kind could also be edited and

manipulated in different ways, such as removing the non-targetlike learners' utterances that trigger the provision of corrective feedback, as Carpenter et al. (2006) did in their study, or taking this procedure one step further by asking students to report on the cues they relied on when making their interpretations, a suggestion made by Mackey (2006b).

It is also possible to draw on other tools and procedures, which may include *immediate reports*, as when learners are invited to verbalize their thoughts after a 10-15 s long conversational turn on cue from the researcher (e.g. Egi 2004, 2007), an *analysis of transcripts* of classroom interaction (e.g. Yoshida 2010), as well as *exit questionnaires* administered on completion of communicative tasks or the final posttests with a view to gauging the degree of students' awareness of the feedback provided and the focus of the outcome measures applied (e.g. Mackey et al. 2010; Sheen 2010c; Yang and Lyster 2010; see also Mackey and Gass 2005). Last but not least, Mackey (2006b) also discusses the potential of *key and eye tracking software*, commonly used by psychologists, or recent advances in *cognitive neuroscience*, such as event-related potentials (ERPs), based on electroencephalography (EEG), and functional magnetic resonance imaging (fMRI), although, admittedly, access to such techniques is still severely limited, let alone the fact that they would find little application in classroom-based studies.[19] Given that all of these data collection procedures, including stimulated recalls which have been the most frequently employed in examining the degree of learners' attention and noticing-the-gap, suffer from limitations (e.g. Leow and Morgan-Short 2004; Leow et al. 2011), the most sensible solution is perhaps to resort to these techniques or various constellations of these devices as dictated by the demands of a specific situation. This is in line with what Bao et al. (2011, p. 227) suggest when they comment: "It is critical that the researcher consider pros and cons of available measures and select the measures that are appropriate for the goal and context of the study. A triangulation of more than one measure will allow researchers to examine learner noticing from multiple angles and better interpret the data obtained".

The study briefly outlined here for illustrative purposes was conducted by Kim and Han (2007) and it is of particular interest because of its ingenious design, which made it possible for the researchers to compare teachers' intentions as they respond to errors with learners' interpretations of these corrective moves. It also investigated students' ability to recognize the gap between their utterances that trigger corrective reactions and the linguistic information contained in recasts, as well as the extent to which this recognition is a function of the type of teacher intent (i.e. an attempt at correction or an effort to sustain communication), the type of the addressee (i.e. a direct recipient of feedback vs. an observer), the type of the target feature (i.e. lexical, phonological and morphosyntactic), and the way in which recasting is provided (i.e. combinations of

[19] It should be noted that Mackey's (2006b) suggestions are made in relation to interactionist research in its entirety rather than only studies of oral corrective feedback.

isolated vs. incorporated and declarative vs. interrogative). The subjects were adult learners of English as a foreign language who represented an intermediate level, attended four classes in a private institution, and were taught by means of communicative methodology.

The data were collected through audio- and video-recordings of two classes, which were augmented with observations, and stimulated recall reports with students and teachers, which were audio-recorded as well. The former were interviewed immediately after each class and asked to describe their thoughts as they received a recast, while the latter took part in such interviews after the second class to avoid the possible priming effects, and were also requested to recall what they were thinking as they were reacting to the inaccurate learner output. The recasts were coded with respect to their complexity, content and function, and the comments made by the students were grouped into the categories of no recognition of recast, recognition of recast, and no comment, with the second of these being further subdivided into no recognition of the gap and recognition of the gap (i.e. complete and incomplete) and the status of the addressee being considered as well. This served as a basis for detailed analyses of the interfaces between teacher intent and learner interpretation in the context of contextual variables, which were conducted with the help of descriptive and inferential statistics (i.e. *Chi* square tests of independence). Although the study is pioneering in its approach and the multi-faceted nature of the analysis, it is not free from limitations related to the small sample size, failure to take heed of individual differences between subjects, the lengthy delay between the class and the stimulated recall interview in the case of some students, or the cross-sectional nature of the investigation. The most acute problem, however, which in fact always afflicts research on cognitive responses to a greater or lesser extent is that, by Kim and Han's (2007, p. 296) own admission, "(…) there is no guarantee that the thoughts elicited (…) were entirely the thoughts the participants had at the time a recast was given; rather, it is likely that some of their comments were 'second thoughts' as a result of the participants (…) being tasked with viewing the tape and commenting, a task-induced effect, so to speak".

4.3.1.6 Evaluation and Recommendations

Looking at the methodology of the studies outlined in the present section and the results of the research syntheses and analyses conducted, among others, by Mackey and Goo (2007), Li (2010), or Lyster and Saito (2010), it is clear that in order to accommodate the emerging empirical goals, research into oral error correction has grown increasingly more complex over the last decade and its design has been considerably improved to, on the one hand, control for and, on the other, gain insights into the impact of extraneous variables. This is evident in the gradual transition from descriptive to experimental studies, and some attempts to combine the two paradigms, more elaborate instructional treatments, the inclusion of a greater diversity of linguistic features, the use of measures of explicit and implicit

knowledge, reliance on various data collection tools meant to capture the impact of mediating factors and learner engagement, or the application of more advanced statistical procedures. Despite these undeniable developments, much still remains to be done, particularly in relation to such areas as:

(1) the length of the pedagogic intervention, as two or three treatment sessions may often be insufficient to produce clear-cut, tangible effects;
(2) the assessment of performance, which should by default rely on tasks necessitating the use of the targeted feature in spontaneous output, and allow analyses of this use both in terms of production accuracy and progression along developmental sequences;
(3) the examination of the durability of the treatment gains, which should involve delayed posttests administered not only weeks but perhaps also months after the intervention;
(4) more consistent operationalization of the mediating variables but also recognizing their differentiated and nuanced nature (e.g. different types of anxiety, different aspects of language aptitude);
(5) greater reliance on clusters of data collection tools when investigating learners' engagement;
(6) frequent combination of the descriptive and experimental paradigms, because such *hybrid* (Ellis 2001), or *mixed methods* (Cresswell 2008) *research*, allows examining both the process (e.g. defined in terms of occurrence, nature and effects of corrective feedback as reflected in uptake and repair) and product (i.e. long-term accuracy of use of the targeted form in different contexts).

In addition, it is also possible to conduct *longitudinal studies* of how learners react to different CF moves over a longer period of time and what impact reactive negative evidence has on their mastery of different language subsystems, as well as *case studies* which could strive to account for such issues in terms of an interplay of a host of factors. In practice, this would be tantamount to going beyond the framework presented in Fig. 4.1 in Sect. 4.2, which Ellis (2010b, p. 346) describes as "(…) componential, analytic, and, arguably, reductionist", to include *ethnographic studies* of error correction and adopt an emic rather than only an etic perspective by looking into how the provision of corrective feedback is actually accomplished in different contexts and how it is affected by different individual and contextual factors. On the one hand, this approach would be in line with the tenets of sociocultural or sociocognitive theories, according to which "CF is viewed at one and the same time as both a social and cognitive event that needs to be studied in situ by taking into account the goals and motives of the participants" (Ellis 2010b, p. 346). On the other, it would recognize the claims of *dynamic systems theories* (cf. De Bot et al. 2007; Larsen-Freeman and Cameron 2008), which posit that learning is the outcome of an interaction of a multitude of factors occurring at different levels, and, therefore, it can only be investigated with the help of multiple blended methods. As Ellis (2010b, p. 346) insightfully comments, "[t]here is no need (…) for paradigms

wars. There is also obvious merit in more holistic, qualitative approaches that document the situated nature of CF and the complex discoursal events where learning takes place". This also means that research into different aspects of corrective feedback cannot possibly be limited to laboratory settings in pursuit of internal validity, as Goo and Mackey (2013) would have it, but has to involve as well real-world classrooms and intact groups, since, as Lyster and Ranta (2013, p. 179) state, "(…) both lab- and classroom-based SLA research are needed and (…) the two complement each other. When findings converge, we can be relatively certain of having understood the phenomenon at hand". In fact, one might wonder whether concerns over ecological validity should not supersede those over internal validity and thus classroom-based research should not become predominant given that "[t]here is reason to believe that teachers are likely to be influenced by evidence that comes from teaching and learning settings comparable to their own" (Lyster and Ranta 2013, p. 180).

4.3.2 The Effectiveness of Different Types of Oral Corrective Feedback

Since empirical evidence for the overall effectiveness of oral error correction was presented in Sect. 2.4.2 of Chap. 2, both on the basis of the results of earlier studies, state-of-the-art reviews and research syntheses and analyses, and it is clear that such negative evidence "(…) plays and important role in L2 acquisition, contrary to the claims of the zero option" (Ellis 2008, p. 885), the discussion in the present section is limited to the findings of studies that provide information about the effectiveness of different corrective moves. In other words, the main emphasis is placed on *how* error treatment is executed, or the different techniques that can be utilized for this purpose, especially in situations when learners are engaged in making meaning and striving to accomplish their communicative goals. At the very outset, the results of descriptive research will briefly be presented, which will be followed by an overview of the empirical investigations that have focused on the characteristics of recasts as feedback moves, and then the focus will be shifted to research projects that have examined the relative value of implicit and explicit as well as input-providing and output-prompting corrective feedback. The vast majority of the research projects discussed below have been conducted within the cognitive, psycholinguistic paradigm, which is a direct corollary of the fact that the provision of corrective feedback has mainly been investigated as part of form-focused instruction, and, as such, it has primarily drawn support from theoretical positions representing the so-called acquisition metaphor (Sfard 1998) (see Sect. 2.4.1 in Chap. 2). Still, references to much less numerous studies embracing a more sociocultural perspective are also made when necessary in order to further illuminate the complex phenomena in question.

4.3.2.1 Findings of Descriptive Studies

The main point of departure for descriptive research on error correction is the landmark study conducted by Lyster and Ranta (1997) in the context of French immersion classrooms in Canada, which provided a source of inspiration and methodology for subsequent empirical investigations. The researchers found that corrective feedback was supplied following a little less than two-thirds (62 %) of the incorrect utterances and that it most frequently took the form of recasts, which, however, turned out to be the least effective in triggering uptake and repair, visibly much less so than the feedback moves allowing negotiation of form, that is elicitation, metalinguistic clues, clarification requests or repetitions, or what is now collectively referred to in the literature as prompts (cf. Lyster 2004). As has already been pointed out in Sect. 3.5.4.1 in Chap. 3, this phenomenon was accounted for in terms of the superior potential of these feedback moves to generate learner active involvement in the process of error treatment in the form of self- and other-repair in comparison with techniques that reformulate the inaccurate language production in more explicit or implicit ways, as is the case with direct correction and recasting, respectively.

In two extensions of this original study, which involved a reanalysis of the same data, Lyster (1998a, b) additionally investigated the occurrence and effects of different corrective moves as a function of different categories of errors and also explored in greater depth the contributions of various types of recasts in an attempt at explaining their limited success in eliciting uptake and repair. It turned out that recasts were the most frequent corrective moves following phonological and grammatical errors, but whereas about half of them indeed led to successful repair in the case of the former, prompts worked much better in the case of the latter. This is explained in terms of the interpretation of the corrective function of the two types of feedback because recasts were perceptually salient and their role was thus unequivocal in reading activities, where correction of pronunciation errors often took place. By contrast, they tended to be misinterpreted for mere non-corrective repetitions in response to the inaccuracies involving grammar rules, thereby failing to convey the necessary negative evidence, and being less likely than prompts to incite learners to notice the gap, reprocess the non-target use of language (cf. Swain 1995) and then attempt repair. When it comes to lexical problems, negotiation of form was more frequent than reformulations, in all likelihood owing to teachers' awareness of the potential ambiguity of recasts which can easily be mistaken for synonyms of the lexical items used, and on most occasions it triggered output modifications in the direction of the target language.

Subsequent analyses of the situations in which different types of recasts were employed also showed that their distribution in response to ill-formed utterances mirrored the distribution of positive comments following accurate language output, which was responsible for the ambiguity of correction rendering it less likely to be perceived as negative evidence. As Lyster (1998a, p. 577) writes, "(…) recasts have more in common with non-corrective repetition and topic-continuation moves

than with other forms of corrective feedback". It would seem then on the basis of these findings that the key properties ensuring the success of oral error correction is that it should be adequately explicit in a specific context to be attended to by learners, as well as output-prompting so that the onus is on the student to undertake some kind of repair of the ill-formed utterances.[20] The need for such characteristics can be elucidated with the help of the claims of Relevance Theory (Sperber and Wilson 1985) because, in the case of recasts, the informative intention of the teacher, which is the wish to direct the learner's attention to the inaccurate form, is obscured to some extent by his or her communicative intention, which seems to focus on the content of what has been said rather than form. In the words of Niżegorodcew (2007b, p. 53), "[s]tudents' awareness of the corrective function of teachers' feedback seems to be an indispensable aspect of effective L2 learning".[21]

Such results were to a large extent corroborated in a series of subsequent studies carried out in a variety of educational contexts. The findings of the study undertaken by Panova and Lyster (2002), the design of which has been outlined in the previous section, for example, demonstrated that in a beginner, adult ESL classroom, recasts and translations were the most often used corrective moves (i.e. more than three quarters of the total number), and the rates of uptake and repair turned out to be lower than those in Lyster and Ranta's (1997) empirical investigation, a situation that can be attributed to the predominance of correction based on reformulation. When such output modifications did take place, it was mainly in response to feedback inviting negotiation of form rather than the provision of the correct version through implicit (i.e. recasts and translations) and explicit (i.e. direct correction) feedback. Drawing on Ellis (1997), Lyster and Panova (2002, p. 592) hypothesize that:[22]

> Possibly, by serving as exemplars of positive evidence, recasts facilitate the internalization of new forms while negotiation of form techniques enhance control over already internalized forms. In this view, continued recasting of what students already know is unlikely to be the most effective strategy to ensure continued development of target language

[20] There is no agreement among researchers as to the value of learners' incorporating into their own production the reformulation contained in a recast. On the one hand, researchers such as Mackey and Philp (1998) take the stance that whether or not learners actually manage to repeat a recast may be inconsequential to acquisition and it is redundant in the error correction sequence that is both initiated and completed by the teacher. On the other hand, however, according to the tenets of the Output Hypothesis (Swain 1985, 1995, 2002), even such production can assist the move from semantic to syntactic processing, aid the process of hypothesis-testing, and contribute to greater automatization.

[21] A very different evaluation of the efficacy of recasts can be found in the paper by Goo and Mackey (2013), who point to a number of methodological flaws and interpretative problems in the studies conducted to date.

[22] As explained in Sect. 2.2 in Chap. 2, recasts simultaneously constitute positive and negative evidence, but, in fact, the latter may turn out to be irrelevant in situations when learners fail to notice their corrective function.

> accuracy and may even have a leveling-off effect on their L2 development. Similarly, continued prompting of learners to draw on what they have not yet acquired will be equally ineffective. A balance, therefore, of different feedback types selected in the light of various contextual, linguistic and cognitive factors is likely to prove more successful than overusing any one feedback type.

Empirical evidence for the superiority of CF types that involve the learner in the treatment sequence and are therefore transparent when it comes to their corrective function, as embodied in various kinds of prompts, also derives from empirical investigations undertaken in foreign language contexts. One such research project was carried out by Havranek (2002), who analyzed 1,700 instances of oral corrective feedback following the erroneous utterances produced by 207 learners representing different ages and proficiency levels. In another study, Tseng (2004) investigated 18 h of classroom interaction from reading, writing, grammar and general English lessons taught to secondary school learners in Hong Kong, and found that although recasts and explicit correction were the most common corrective moves, they never led to uptake and successful repair, which were the most frequent in response to repetitions, one way in which prompts can be realized. As in Lyster's (1998b) study, it was also observed that while negotiation of form was the most beneficial for grammatical errors, recasting and explicit correction proved to be equally effective in dealing with phonological problems.

Further empirical support testifying to the superiority of more participatory and explicit types of feedback over recasting comes from a research project conducted by Samuda (2001), which can be interpreted within the framework of Sociocultural Theory (see Sect. 2.4.1.7 in Chap. 2). In the face of her learners' failure to use modal verbs expressing possibility such as 'may' or 'must' in their speech, she embarked on correction of their utterances during whole-class interaction, first using implicit reformulation (i.e. recasts) of the students' earlier output and then switching to explicit correction in the form of metalinguistic information. It turned out that it was the latter rather than the former that was needed to construct the zone of proximal development for the learners, thus allowing them to internalize the targeted item and use it independently in their oral output.[23] Finally, the positive role of corrective feedback which is salient and provides learners with opportunities for pushed output also finds support in Nassaji's (2007b) study, which did not draw on naturally occurring classroom data, but was still descriptive in focusing on the incidence and effects of different types of error correction in dyadic interactions between 42 learners and 2 native-speaker teachers. The analysis enabled him to identify six subtypes of reformulation and five subtypes of elicitation which differed in relation to their explicitness and requirement for the

[23] Samuda's (2001) study in fact consisted of three stages, in which the learners first performed a communicative task without any intervention on the part of the teacher, then they made presentations to the whole class during which feedback was provided, and, finally, they were requested to prepare a poster on their own, with the teacher yet again adopting the non-directive role of an observer.

production of output.[24] He summarized the results by saying that "(…) overall implicit forms of recasts or elicitations led to a smaller amount of learner repair in comparison to their more explicit forms". This, in turn, served as a basis for the conclusion that "(…) the usefulness of interactional feedback depends to a large degree on its explicitness and the extent to which it is able to draw the learner's attention to form" (2007, pp. 538–539), as well as the recommendation that, rather than investigating broad categories of feedback, researchers should distinguish between the sometimes disparate ways in which CF moves can actually be implemented.

Also worth mentioning at this juncture are three descriptive studies undertaken by the present author in the Polish educational context (Pawlak 2005a, 2006c, 2009), which examined the broader concept of incidental focus on form (see Sect. 1.6.1 in Chap. 1), but nonetheless offer interesting insights into the patterns of feedback at the secondary school level. One of these (Pawlak 2005a) focused on communication-based segments of classroom discourse in 30 English lessons conducted by 15 teachers and found, somewhat in contrast to the results of the studies reported above, that it was explicit rather than implicit correction that occurred the most frequently. More in line with the findings of the previous research, however, covert recasts proved to be much less likely to trigger uptake and repair than more explicit feedback types, both those involved in negotiation of form, such as metalinguistic information or elicitation, and those involving direct provision of the correct form. In such situations, not only were the learners more cognizant of the fact that they were being corrected, but they were also supplied with the ample time and space (Garton 2002) in which they could make an attempt at self-correction. Another research project (Pawlak 2009) differed from the ones discussed thus far in that it investigated the occurrence and usefulness of incidental focus on form, including the reactive form thereof (i.e. corrective feedback), that was initiated by learners rather than teachers as part of whole-class exchanges. The analysis of 775 min of meaning-focused interaction gleaned from 60 lessons revealed that peer-generated correction occurred in only a fraction (ca. 3.5 %) of FFEs, and, when it did, it was overt and it was taken heed of by other learners. The provision of corrective feedback was also an important aspect of the third study (Pawlak 2006c) which explored the occurrence of negotiation of form and meaning, triggered again by the students themselves, during activities performed in pairs and small groups. It turned out that in the transcripts of interactions during 112 instances of group work based on a wide variety of tasks, confirmation checks, which are to some extent equivalent to recasts (cf. Ellis 2008), were used more

[24] The six subtypes of reformulation were as follows: (1) isolated recast minus prompt, (2) isolated recast plus prompt, (3) embedded recast minus prompt, (4) embedded recast plus prompt, (5) recast plus enhanced prompts, and (6) recast plus expansion. The five subtypes of elicitations included: (1) unmarked elicitation, (2) marked elicitation, (3) marked elicitation plus prompts, (4) marked elicitation plus enhanced prompt, and (5) elliptical elicitation. He also isolated the category of *other feedback* that contained explicit correction, repetition with falling intonation and various content negotiation moves.

often than clarification requests, which are classified as an option in negotiation of form or prompts. Although both were equally likely to generate modifications of output, the quality of those modifications was higher for the latter, which could be accounted for in terms of the fact that the former were often mistaken for time-gaining devices or acknowledgements of what has been said.[25]

Even though the findings of the descriptive studies discussed thus far demonstrate rather unequivocally that recasts are not effective feedback moves as they are not sufficiently salient and they create few opportunities for learners to engage in uptake and repair, evidence to the contrary is available as well, and there are grounds to assume that the specificity of the instructional setting might to some extent determine the use, interpretation and consequences of various techniques of error correction. Ellis et al. (2001), for example, studied the link between reliance on different focus on form practices, including teachers' use of corrective feedback, and the occurrence of uptake and successful repair during 32 meaning-focused lessons taught in 12 intensive ESL adult classes in New Zealand. Similarly to Lyster and Ranta (1997) or Panova and Lyster (2002), they found that recasts were the most frequent feedback moves, but, in contrast to the two studies, it turned out that in 71.6 % of such cases they were effective in eliciting uptake, 76.3 % of which contained successful repair of the ill-formed utterances, a much higher rate than in the case of other corrective techniques. These somewhat surprising results were explained in terms of the learners' preoccupation with target language forms in the communicative classes they attended, which could have been primed by the prior provision of FFI, with the effect that "(…) the learners may have been on the look-out for the teachers' implicit feedback" (Sheen 2004, p. 269). High levels of uptake following recasts were also reported by Ohta (2000, 2001) in her investigation of the private speech of learners of Japanese in a foreign language context, a finding that she interprets as evidence for the salience of implicit reformulations, in particular when they involve *incidental recasts*, or unintentional corrections of silent responses in reaction to prompts and questions directed at other individuals.

Interesting insights into the occurrence and value of different types of CF in relation to their potential to elicit uptake and repair also come from studies by Oliver and Mackey (2003), Sheen (2004), and Lyster and Mori (2006), all of

[25] It should be kept in mind, however, that the study focused both on negotiation of form and meaning, with the effect that it did not attempt to tease apart the differential effects of confirmation checks and clarification requests following utterances that were genuinely misunderstood and those where the negotiation move was meant to be corrective in nature. On the whole, the incidence of negotiated interaction was rather low (0.66 such exchanges per task), it was predominantly conversational rather than didactic in nature, and the adjustments made by interlocutors in response to feedback were in most cases minimal. Interestingly, similar findings have been reported by Pica (2002), who analyzed discussion activities in L2 content classes. To be more specific, the incidence of interactional feedback in the form of recasts and negotiation moves was low, with the effect that output modifications hardly ever occurred. This led the researcher to conclude that such activities fail to provide learners with both positive and negative evidence, the latter of which is particularly significant for language learning.

which demonstrated that whether or not learners actually perceive the corrections is a function of contextual factors, which may operate at the macro or micro levels. More specifically, as was the case to some extent with the study conducted by Ellis et al. (2001), they indicated that successful output modifications are more likely to occur in situations in which learners are concerned with successful mastery of the formal aspects of the TL, either as a result of the overall instructional setting, the presence or prior instruction, or the focus of the task in hand. Since these studies pertain to the impact of mediating variables on the effectiveness of oral correction, however, their findings will be presented in more detail in Sect. 4.3.3.

As pointed out in the section devoted to methodological issues, a major step forward in research on oral error correction have been attempts to augment meticulous descriptions and analyses of the patterns of corrective feedback in classroom interactions with individualized, tailor-made tests. The inclusion of such delayed outcome measures was a significant advance on purely descriptive research in that it made it possible to determine whether successful self-correction that immediately followed the occurrence of corrective information translated into a learner's ability to use the TL feature at a later time, thereby providing valid evidence for its acquisition (cf. Nabei and Swain 2002; Ellis et al. 2006; Long 2007; Nassaji 2009). In one such process–product study representing the focus on form paradigm, Williams (2001) examined the relationship between the uptake manifested by eight learners during spontaneous intensive English classes over the period of 8 weeks and their performance on periodic individualized tests. She found that the accuracy percentages on tests containing the items targeted in the focus on form episodes ranged from 45 % to 94 %, with the scores being a reflection of the students' proficiency level (i.e. more advanced students performed better) but not the roles they had performed in these episodes (i.e. whether the initiator and the provider of the new input was the student himself or herself, another student, or the teacher). Nabei and Swain (2002), in turn, sought to determine the effectiveness of recasts provided to one adult learner of English as a foreign language, both in relation to immediate responses and long-term-acquisition. They recorded six classes, each 70 min in length, over the period of 10 weeks, identified the corrective sequences in which recasts were employed, designed grammaticality judgments tests for individual learners, and administered them within a week after the recording, as well as using the whole battery of 27 items one more time after the last testing session. They reported an overall accuracy rate of 56 % on the first test and 78 % on the second test, results that are impressive and, were it not for the fact that the focus was on a single learner, could be considered as compelling evidence for the effectiveness of recasting.[26]

In another study, the design of which was described above, Loewen (2005) found that the participants were able to remember and apply 50 % of the linguistic

[26] In fact, the considerable improvement on the delayed posttest could be attributed to the fact that the learner took part in stimulated recall sessions in the interval between the two tests which involved commenting on the corrective episodes. Thus, the evidence for the positive impact of recasts becomes somewhat tenuous.

features targeted in incidental focus on form one day after the occurrence of a FFE and 40 % 2 weeks later, an outcome that undoubtedly augurs well for the effects of corrective moves that are followed by successful repair. Finally, the research project conducted by Nassaji (2009), also discussed in considerable detail above and constituting to some extent a follow-up on an earlier descriptive study (Nassaji 2007b), showed that it was more explicit variants of recasts and elicitations that resulted in higher rates of successful correction of their written descriptions, both immediately following the interactions and after 2 weeks. The positive effects of explicitness, however, were more evident in the case of recasts than elicitations. Echoing the assumptions made by Doughty (2001), Panova and Lyster (2002), and Long (2007), he writes that "(…) the results may be taken to support the claim that recasts could be beneficial for learning new forms (at least in the short run) if they are salient enough to draw learners' attention to those forms. (…) [and] elicitations can be equally (or even more) effective if learners already know the targeted forms or have declarative knowledge of those forms" (2009, p. 441). One study that has failed to show a connection between immediate uptake and subsequent acquisition was conducted by Smith (2005) and involved 24 intermediate-level ESL learners at a US university who took part in text-based computer-mediated communication. In this case, the occurrence of uptake in negotiated focus on form episodes targeting lexical items did not lead to greater mastery of these items on immediate and delayed individualized posttests, a finding that is attributable to the nature of interaction in a CMC environment.

4.3.2.2 Findings of Research into Recasts

Even though *recasts* have necessarily been the focus of descriptive studies of oral correction as it transpires in classroom and out-of-class interactions, they have also become an object of empirical inquiry in their own right, as is evidenced by several state-of-the-art papers devoted solely or mainly to the discussion of the types, functions and effects of this corrective move (e.g. Nicholas and Spada 2001; Ellis and Sheen 2006; Long 2007; Russell 2009; Goo and Mackey 2013). According to Ellis and Sheen (2006), there are both pedagogical and theoretical reasons why researchers should set so much store by examining the incidence and characteristics of this particular type of oral CF. The former are related to teachers' frequent use of recasts in language lessons, a fact that is attested to by the research findings reported above, with the effect that learners are bound to be exposed to substantial numbers of these feedback moves and their potential for stimulating language learning thus clearly merits close empirical scrutiny. As for the latter, recasting can be viewed as a source of both positive and negative evidence, obviously on condition that learners perceive the corrective intention and engage with the feedback (see Fig. 4.1), and, as a result, carefully designed research into its effectiveness can help specialists disentangle the role of the two types of information for SLA (see Sect. 2.2 in Chap. 2 for a discussion of the two types of evidence). Additionally, being simultaneously relatively implicit but also primarily

input-providing, they are perfect candidates for inclusion in studies comparing the value of feedback options possessing such properties with the utility of those that are more explicit and require output modifications. Commenting on the significance of recasts, Long (2007, pp. 76–77) points out that:

> If it can be shown that recasts work, and do so efficiently enough, then teachers in task-based, content-based, immersion, and other kinds of second language classrooms may have the option of dealing with many of their students' language problems *incidentally* while working on their subject matter of choice, with fewer of the interruptions and other unpleasant side effects caused by traditional 'overt correction' practices (emphasis original).

He goes on to list the advantages of contingent recasts over non-contingent *models*, which are exchange-initial utterances such as statements, questions or instructions that supply learners only with positive evidence by demonstrating the use of specific linguistic features (cf. Long et al. 1998). These are based to a considerable degree on Saxton's (1997) Direct Contrast Theory (see Sect. 2.4.1.1 in Chap. 2 and note 4 in Chap. 1) and include, among others, the conveyance of the requisite linguistic information in context, the existence of a joint attentional focus for interlocutors, the learner's prior comprehension of at least part of the message, as well as the fact that he or she is involved and interested in the exchange by virtue of the very act of attempting to make a contribution to the ongoing interaction, which ensures high levels of motivation, attention and the resultant noticing of the targeted feature. Moreover, since the learner should have no difficulty in understanding a reformulation of his or her own original utterance, some of the limited attentional resources are freed up, and can be allocated to processing the formal aspects of the utterance and creating form-meaning mappings, a task that is facilitated by the juxtaposition of the correct and incorrect version and observing the contrast.

Leaving aside for now the controversial issue as to whether the use of implicit feedback is indeed the most beneficial way of performing oral error correction in the foreign language classroom, a point that will be addressed in the conclusion to the present work, it should be emphasized that empirical investigations of recasts may pose a major challenge and the results of relevant studies should be treated with circumspection.[27] This is because: (1) there is little consensus as to the precise definition of the construct, with far-reaching ramifications for the ways in which it is operationalized in different research projects, and, party as a corollary of this, (2) recasts are not monolithic and may in fact assume a number of forms, which can be placed closer to one or the other end of the implicit-explicit as well as input-providing-output-pushing continua. On the matter of definition, it is possible to opt for a very general one, an approach embraced by Lyster and Ranta (1997, p. 46) in the study referred to above, taking the stance that "[r]ecasts involve the teacher's reformulation of all or part of a student's utterance minus the error". Alternatively, an attempt could be made to underline the fact that these CF

[27] In fact, this applies in equal measure to other types of corrective feedback that are often compared with recasts, an issue that will be touched upon later in the present section.

moves are communicatively rather than didactically motivated and are embedded in discourse oriented to message conveyance. This is exactly what Long does when he upgrades his earlier definition, according to which "[r]ecasts are utterances that rephrase a child's utterance by changing one or more components (subject, verb, object) while still referring to its central meaning" (1996, p. 434), with the crucial caveat that "(…) throughout the exchange, the focus of the interlocutors is on *meaning* not language as an object" (2007, p. 77) (emphasis original).

Given the problems inevitably involved in ascertaining the intentions of teachers as they resolve to correct their learners' ill-formed utterances, it is perhaps more reasonable to adopt a definition that would not require researchers to make decisions based on conjecture and at the same time be comprehensive enough to allow a classification of recasts into different subtypes based on their formal characteristics (cf. Ellis and Sheen 2006). Such a definition is proposed by Sheen (2006, p. 365), for whom a recast consists of "the teacher's reformulation of all or part of a student's utterance that contains at least one error within the context of a communicative activity in the classroom". She views recasts as discourse tools that occur in interaction at the level of a single turn, they can arise in the course of both meaning-oriented and code-focused classroom discourse, they can vary in the degree of their implicitness/explicitness depending on their form, and the reformulations of one or more errors they offer can involve complete, partial or expanded repetitions. These criteria bring us to the second point mentioned above, that is the fact that recasts can in fact come in all shapes and sizes, with some subtypes being more conducive to uptake and acquisition than others, a feature that also became apparent in the findings of the studies conducted by Nassaji (2007b, 2009), outlined earlier in this section.

As illustrated Table 4.2, which presents the possible types and subtypes of recasts along with their distinctive characteristics on the basis of the coding system developed by Sheen (2006), these corrective reactions can consist of *multiple moves*, in which case they can be repeated or used in conjunction with other feedback options (e.g. prompts, metalinguistic clues, etc.), as well as *single moves*, which may also differ along several dimensions such as their declarative or interrogative mode, the extent to which they deviate from the original learner utterance, the amount of reduction involved, their length, the number of adjustments made in the repetition, the nature of such adjustments, and the type of linguistic feature targeted by correction.[28] She applied this coding scheme in her reanalysis of the data collected in EFL and ESL classrooms for the purposes of previous studies (i.e. Ellis and Loewen 2001; Sheen 2004), and concluded that "(…) the majority of recasts arising in the classrooms investigated are short, more likely to be declarative in mode, reduced, repeated, with a single error focus, and involve substitutions rather than deletions and additions" (2006, p. 386). Additionally, there was a positive relationship between the presence of these features and the occurrence of

[28] An interesting discussion of the methodological issues involved in the coding of corrective recasts can be found in Hauser (2005), who warns that coding schemes ignore the construction of meaning by participants in the local context of interaction.

Table 4.2 Types and characteristics of recasts (based on Sheen 2006; Ellis 2008; and own data)

Characteristic	Description	Example
1. Multi-move recasts	A single teacher turn contains more than one feedback move, with at least one recast (cf. Doughty and Varela 1998)	
a) *Corrective recasts*	Recasts preceded by other-repetition	S. I pay the cost T. I pay? I pay the cost.
b) *Repeated recasts*	Recasts are repeated partially or in full	S. They like… horse o ride horse. T. OK, a race horse? A race horse.
c) *Combination recasts*	Recasts that occur with other types of feedback (e.g. metalinguistic clue), with the exception of explicit correction	S. He has black hairs. T. Black hair. Uncountable.
2. Single-move recasts	A single recast included in a single teacher turn (cf. Dulay et al. 1982; Roberts 1995; Lyster 1998a; Philp 2003)	
a) *Mode*	Recasts can be: (1) declarative as well as (2) interrogative	S. He like Mary a lot. T. He likes Mary a lot (1). T. He likes Mary? (2)
b) *Scope*	The extent to which recasts differ from the erroneous utterance; they can be: (1) isolated, when only the inaccurate part is reformulated and no new information is added, or (2) incorporated, when there is some new semantic content included in the reformulation	S. I think she will give the job. T. I think she'll give up the job (1). S. He is not ambition. T. He is not ambitious because he is lazy? (2)
c) *Reduction*	Recasts can be: (1) reduced, i.e. shorter than the utterance they reformulate, or (2) non-reduced, i.e. the entire utterance gets repeated	S. He borrowed ten bucks from me. T. Lent (1). S. I meet him on vacation. T. I met him not vacation (2).
d) *Length*	Recasts can comprise: (1) a single word or a short phrase with one content word, (2) a longer phrase including more than two words, or (3) a clause including two phrasal constituents and a finite verb	S. Jerry got two dogs on birthday. T. On (1). T. On birthday (2). T. He got two dogs for birthday (3).
e) *Number of changes*	The use of recasts my involve: (1) one change to the original utterance, or (2) multiple changes (i.e. to more than one linguistic item)	S. There are too few chairs for us. T. Chairs (1). S. He waited me before house. T. He waited for me in front of the house (2).

continued

Table 4.2 (continued)

Characteristic	Description	Example
f) *Type of change*	Recasts can involve reformulations in the form of: (1) addition (a missing grammatical element is supplied), (2) deletion (i.e. a given linguistic element is removed), (3) substitution (i.e. one element is replaced with another), and (4) combination (i.e. any of the previous changes are applied at the same time)	S. I worry about the side-effect. T. Side-effects (1). S. Whitman comes to my mind. T. Comes to mind (2). S. I met her on a party. T. At a, at a party (3). S. Ted phone for me and weep. T. Ted phoned me and wept (4).
g) *Linguistic focus*	Recasts can be used to address errors in the use of: (1) grammar, (2) vocabulary, (3) pronunciation, and (4) pragmatics	

uptake and/or successful repair of the utterances, which she attributes to the fact that recasts of this kind are more explicit and thus more salient.

Although Sheen's (2006) observations are revealing and concur to some extent with the findings of other studies (e.g. Nassaji 2007b), for reasons spelled out above, they cannot be interpreted as testifying to the superiority of some types of recasts over others in terms of their actual contribution to language development and are therefore in need of empirical validation, which has in fact been going on for well over a decade. Research into the role of recasting has taken the form of *descriptive*, primarily *cross-sectional studies*, such as those conducted by Lyster and Ranta (1997), Izumi (2000), Braidi (2002), Morris (2002), Sheen (2004), or Lyster and Mori (2006), in which the effectiveness of these feedback moves was assessed in terms of uptake, as well as *quasi-experimental* and *experimental empirical investigations*, in which their effects were estimated in relation to gains in production accuracy or movement through developmental sequences (see Sect. 4.2.4). Since the findings of descriptive research into oral error correction have already been discussed at some length, also with respect to the possible contributions of recasts, it is mainly experimental and quasi-experimental studies that will be the focus of the present considerations, with the caveat that, due to space limitations, the overview can only be confined to a representative sample of pertinent research projects. Many studies falling into this category have been conducted under *laboratory conditions* with a view to minimizing the impact of extraneous variables and, as can be seen from Table 4.3, they have addressed such issues as the relative effectiveness of recasts and models, the value of meaning-focused interaction with or without recasts, and the relationship between different characteristics of recasts and subsequent acquisition. It should also be emphasized that, unlike most descriptive research, these empirical investigations have primarily explored the effects of *focused error correction*, or such that is directed at just one linguistic feature or a limited number of these features (see Sect. 3.5.3 in Chap. 3).

Table 4.3 Studies of recasts discussed in the present section

Recasts versus models	Interaction with and without recasts	Characteristics of recasts
Long and Ortega (1997)	Doughty and Varela (1998)	Han (2002); Leeman (2003)
Long et al. (1998)	Mackey and Philp (1998)	Loewen and Philp (2006)
Iwashita (2003)	Ishida (2004); McDonough and Mackey (2006)	

Recasts versus models

Laboratory-based research projects seeking to compare the contributions of recasts and models have been undertaken, among others, by Long and Ortega (1997), Long et al. (1998), and Iwashita (2003). In the first of these, Long and Ortega (1997) investigated the acquisition of adverb placement and direct object topicalization by 30 young adult learners who were provided with an equal number of recasts and prompts during a communicative game, as well as pre- and posttested on a picture description task. While no learning of object topicalization took place irrespective of the experimental condition since the structure proved to be too difficult, the learners who had received recasts outperformed those who had had the benefit of models in the case of adverb placement, while no improvement was observed in the control group. In an extension of the previous study Long et al. (1998), in turn, examined the relative effects of recasts and models on the acquisition of adjective ordering and locative construction by young adult learners of Japanese and direct object placement and adverb placement by young adult learners of Spanish. In both cases, the students were divided into a group receiving models (i.e. listening to sentences with the feature, repeating them, and then demonstrating understanding), a group receiving recasts (i.e. reformulations following errors in the use of the targeted structure), and a control group (i.e. placebo treatment). In this case, there were no statistically significant differences between the three groups learning the two Japanese structures, no improvement for Spanish direct object placement and, once again, superior performance of the recast group over the other two groups on adverb placement. Finally, Iwashita (2003) explored the impact of positive evidence and negative evidence on the short-term grammatical development of beginner-level learners of Japanese (i.e. locative construction 's' and the '-te' verb form). While the students in the control group completed a discussion task, the members of the experimental group engaged in task-based conversations with native speakers, who employed five types of interactional moves, including recasts and models. When the frequency of the two CF moves in the interactions was associated with the participants' performance on immediate and delayed posttests in the form of an oral picture description task, it turned out that although recasts were less frequent in the input, they were more effective in contributing to greater accuracy of use of one of the target features (the '-te' verb form) and they worked equally well irrespective of the participants' initial mastery of the structure. What the results of such carefully designed experimental studies may indicate, then, is that implicit negative evidence in the form of recasts

is superior to positive evidence in the form of models, although its effects may be mediated by the inherent properties of the target item (e.g. its complexity) as well as learners' proficiency level, both of which are closely tied to their developmental readiness, a critical variable investigated in subsequent research.

Interaction with and without recasts

The value of communicative task performance with and without the provision of recasts has been the focus of laboratory-based empirical investigations conducted, for example, by Doughty and Varela (1998), Mackey and Philp (1998), McDonough and Mackey (2006), and Ishida (2004). Doughty and Varela (1998) compared the progress in the mastery of the simple past tense and the past conditional by two ESL content-based science classes, with 34 students aged from 11 to 14, one of which received focused corrective recasts (i.e. repetitions of the deviant utterances with rising intonation, followed by reformulations with falling intonation) on the reports they had prepared before conducting and experiment, whereas the other had no benefit of such negative evidence.[29] The analysis of the participants' oral and written reports before the intervention, immediately after and 2 months later, which involved determining instances of targetlike, interlanguage and non-targetlike uses, showed statistically significant gains on all measures in the experimental groups on both the immediate and delayed posttests, while there was only short-term improvement with respect to interlanguage use in the control group.

The aim of Mackey and Philp's (1998) study was to explore the impact of intensive recasts on the acquisition of question formation (i.e. '-wh' and SVO) by beginner and lower intermediate learners of English as a second language in Australia. The participants were divided into five groups, one of which was a control group, and the other four underwent a treatment in the form of three communicative tasks, designed in such a way as to elicit the targeted structure. Two of the experimental groups represented lower and two higher levels of development with respect to question formation, and, in each case, the students in one of the two only had the opportunity to engage in negotiated interactions, while those in the other were provided with a recast whenever they formed questions inaccurately.[30] The results of the immediate and two delayed (2 and 5 weeks later) posttests demonstrated that only the learners at the higher developmental level, that is those psycholinguistically ready to acquire the targeted form, who received recasts manifested significant improvement in terms of stage increase. In addition, responses to recasts (i.e. repetitions or modification) were rare regardless of the level. The significance of learner reactions to recasts was probed further in a study

[29] It should be noted that the errors were also corrected in the written versions of the report by means of circling and juxtaposing them with reformulations. Given the availability of the oral feedback to all learners, however, it appears justified to discuss the study in this section rather than the one dealing with written error correction.

[30] In both this study and the one undertaken by McDonough and Mackey (2006), the developmental levels were established in accordance with the scale developed by Pienemann and Johnston (1987).

by McDonough and Mackey (2006), which also targeted question development and involved 58 university-level Thai learners of English as a foreign language. The students performed several information-exchange and information-gap activities, with those in the experimental group receiving recasts and those in the control group receiving no feedback. The analysis of the participants' performance on four oral production tests in weeks three, six and nine revealed that progress along the developmental stage in the acquisition of questions was significantly correlated with the provision of recasts and primed production, or the use of the targeted structure in a new utterance, but not with immediate repetitions of the entire reformulation or part of it.[31]

In the last study representative of the line of inquiry in question, Ishida (2004) applied a time-series research design to investigate the impact of intensive recasting on the acquisition of the Japanese aspectual form '-te i-(ru)' by four undergraduate students at a US university, paying particular attention to production accuracy, variability in the use of the targeted feature and the durability of the instructional effects.[32] The subjects participated in eight one-on-one 30-min conversational sessions (daily activities, picture description, weekend talk, etc.), of which the first two served as comparable pretests, the middle four as instructional treatment during which errors were reformulated by means of recasts but other types of CF were also provided, and the last two played the role of comparable posttests.[33] The analysis of the instances of targetlike use through repeated-measures analysis of variance and the Pearson product-moment correlation coefficient demonstrated that the use of recasting had contributed to statistically significant gains in the overall accuracy rate, an effect that was retained on the immediate and delayed posttests, and there was a positive correlation between this increase and the number of recasts provided during the pedagogic intervention. On the other hand, the participants had difficulty in mastering the progressive meaning of the targeted feature, which is accounted for in terms of the interactions between the provision of recasts and the learners' developmental readiness, understood either with respect to prototypicality (Anderson and Shirai 1996) or processability (Pienemann 1998). While this study and the others included in this group indicate that focused recasts are superior to unfocused negotiated interaction, they clearly

[31] *Syntactic priming*, also known as *structural priming*, is defined as the use of a structure that has been previously heard or spoken in subsequent utterances (Bock 1995). Two experiments investigating its occurrence in interactions between L2 speakers of English are reported by McDonough (2006).

[32] Although Ishida (2004) did not include a control group that would have only taken part in negotiated interaction, the time-series design allowed her to document the progress as a result of the intervention, not only from the pretest to the posttest, but also from one instructional session to the next, with the effect that the subjects acted as their own controls. This is the reason why the study is discussed together with research projects actually comparing the effects of interaction with and without recasts.

[33] It should be noted that two students also participated in a delayed posttest conversational session that took place after 7 weeks.

do not offer evidence that such implicit reformulations work better than other feedback moves addressing predetermined linguistic features.

Characteristics of recasts

Valuable insights into the contributions of recasts have also been provided by research projects carried out by Han (2002), Leeman (2003), and Loewen and Philp (2006), which set out to identify the features of these CF moves that are responsible for their impact on second language development. Han (2002) used a pretest, posttest and delayed posttest design to explore the impact of recasts on adult ESL upper-intermediate learners' present and past tense consistency in L2 narration, and their awareness of these structures. The four participants in the experimental group received recasts on their ill-formed utterances as they were telling a story based on a cartoon strip during eight instructional sessions while the four in the control group were not provided with such feedback. The analysis of the data obtained from oral and written narratives based on cartoon strips demonstrated statistically significant gains on both measures in the recast group and no such effect in the control group, which was interpreted as evidence for the occurrence of a cross-modal transfer from speaking to writing. Han (2002) indentified four conditions which may account for the efficacy of recasts in this laboratory study, namely: individual attention given to the student, consistent focus on a linguistic target, learners' developmental readiness, and the intensity and extended nature of instruction, which jointly create the necessary salience, relevance and reinforcement. She concedes, however, that "[n]one of these conditions would seem easily replicable in real classrooms (…)" (2002, p. 569).

Leeman (2003), in turn, designed her classroom-based study with a view to determining whether recasts work for acquisition because they supply positive or negative evidence. Her participants, who were 74 beginner-level undergraduate students of Spanish, native speakers of English, worked on noun-adjective agreement by performing two information-gap tasks under four conditions: (1) recasts, operationalized as a comprehension signal, followed by a reformulation without any emphasis, and a topic continuation move, (2) negative evidence, defined as repetition of the incorrect utterance to indicate the problem, (3) enhanced salience of positive evidence, operationalized as the use of stress and intonation to highlight the target form, and (4) no feedback, or the control group. The students receiving recasts and enhanced positive evidence performed similarly on the picture-description tasks used as immediate and delayed posttests, but significantly better than the negative evidence group whose results were comparable to those of the controls. Leeman (2003) concluded on this basis that the utility of recasts derives from the fact that they provide enhanced positive evidence rather than negative evidence, a claim which is disputed by Ellis and Sheen (2006, p. 586), who point out that "[i]t is possible that if the recasts had been more explicitly corrective, they would have constituted negative evidence and resulted in greater acquisition than the enhanced input".

The study carried out by Loewen and Philp (2006) is reminiscent to some extent of the descriptive research discussed earlier in this section in that it involved meticulous analysis of 17 h of naturally occurring classroom

interaction, but thanks to its design and the use of sophisticated statistical procedures, it also made it possible for the researchers to relate the occurrence of uptake to acquisition, as well as to pinpoint the characteristics of recasts that are responsible for their effectiveness. Similarly to the findings of prior empirical investigations (e.g. Lyster and Ranta 1997; Panova and Lyster 2002), recasts turned out to be more frequent than informs (i.e. the provision of explicit information about the problematic feature) or elicitations (i.e. prompts), and they were less likely to result in uptake than attempts to draw out the accurate form from the learners (i.e. elicitations), but more so than explicit correction. Pearson's *Chi* square analysis of the scores of immediate and delayed individualized posttests, however, revealed that there were no significant differences in the effects of the three types of feedback on acquisition. When it comes to the identification of the properties of recasts that were predictors of their beneficial effects, a binary logistic regression analysis uncovered that: (1) successful uptake was likely to occur in response to recasts which received prosodic stress, were provided with declarative intonation, were part of extended focus on form episodes, and included only one change of the learner's initial utterance, and (2) improved test performance was related to shorter recasts, supplied with the help of rising intonation and including a single modification (see Table 4.2 for the explanation of these characteristics). Loewen and Philp (2006, p. 551) comment on the basis of such results that, "(…) the greatest benefit of recasts for learners lies in their comparability with the learner's initial utterance, not necessarily in relation to their explicitness".

4.3.2.3 Findings of Research into the Effectiveness of Feedback Strategies

While research endeavors aimed at examining the role of recasts in fostering L2 development are commendable and their findings offer invaluable insights into the mechanisms involved in the use of the corrective information contained in this feedback move206 they cannot provide a sufficient basis for making definitive claims about the most effective ways of conducting oral correction, let alone furnish guidelines for classroom practice. This is because, as pointed out above, demonstrating the superiority of recasts over models, proving that interaction including recasts is more conducive to acquisition than interaction without them, or even isolating the characteristics of recasts which make them the most likely to lead to learning outcomes all fall short of showing unequivocally that correcting learners' ill-formed utterances in a rather implicit way without pushing them to undertake self-repair works better than drawing upon explicit and output-oriented CF options, all the more so that the results of descriptive research strongly suggest that the opposite is the case. For this reason, as noted in the discussion of the framework for investigating CF in Sect. 4.2, the main thrust of the recent experimental studies has been comparing the efficacy of *implicit* and *explicit correction*, on the one hand, and *input-providing* and *output-prompting feedback*, on the

Table 4.4 Studies investigating the effects of implicit and explicit feedback, and input-providing and output-pushing feedback discussed in the present section

Studies of implicit and explicit feedback	Studies of input-providing and output-prompting feedback
Carroll and Swain (1993)	Lyster (2004)
DeKeyser (1993)	Ammar and Spada (2006)
Nagata (1993)	Loewen and Erlam (2006)
Carroll (2001)	McDonough (2007)
Kim and Mathes (2001)	Ammar (2008)
Sanz (2003)	Lyster and Izquierdo (2009)
Rosa and Leow (2004)	Sauro (2009)
Ellis et al. (2006)	Dilans (2010)
Ellis (2007)	Yang and Lyster (2010)
Loewen and Nabei (2007)	Pawlak and Tomczyk (2013)
Sheen (2007a)	
Varnosfadrani and Basturkmen (2009)	
Pawlak (2011)	
Goo (2012)	
Yilmaz (2012)	

other.[34] Research projects of this kind have typically investigated the value of *focused error treatment*, or such that is limited to one or a clearly specified set of TL items. They have operationalized both implicit and input-providing CF as the *use of recasts*, explicit correction as the *provision of the correct form*, *metalinguistic information* or *overt elicitation*, and output-providing CF as opportunities for *negotiation of form*, or different kinds of *prompts*. What follows is the presentation of the main findings of these two lines of inquiry, basing on the latest state-of-the-art papers, recent research syntheses and meta-analyses, as well as the results of representative studies, the vast majority of which have been conducted in the last decade (see Table 4.4).[35]

Studies of implicit and explicit feedback

When it comes to the distinction between implicit and explicit feedback, the available empirical evidence is quite straightforward and testifies to the greater efficacy of the latter in comparison with the former, although the magnitude of the difference in the effects of the two may hinge on whether a particular study is conducted

[34] There have also been attempts to investigate the relative effects of explicit feedback and prompts, as evidenced by the research project by Nipaspong and Chinokul (2010), focusing on the development of pragmatic awareness. This is not an important line of inquiry, however, and one might wonder in fact whether it is at all possible to isolate the effects of the two given that prompting also involves the provision of highly explicit metalinguistic clues.

[35] It should be noted that the two distinctions are bound to overlap to some degree in studies seeking to explore the value of input-providing and output-pushing feedback options, such as those conducted by Lyster (2004) or Ammar and Spada (2006). This is because, although prompts may differ considerably in the degree of their explicitness, they are typically more overt than recasts, a somewhat extreme example being the provision of metalinguistic information.

in a laboratory or in a real classroom as well as the way in which the implicit and explicit conditions are operationalized. This conclusion is reached, among others, by Ellis (2008, p. 885), who writes that "[o]verall, the results point to an advantage for explicit feedback", and Sheen (2010, p. 173), who points out that "(…) in a classroom context, it would appear that explicit CF is more effective than implicit recasts". Sheen and Ellis (2011, p. 607), in turn, include in their summary of the current knowledge about error treatment the assessment that "(…) explicit feedback in conjunction with metalinguistic clues is more likely to result in learning than recasts". A more complex picture emerges from the results of the research syntheses and meta-analyses that have been considered in Sect. 2.4.2.4 of Chap. 2, which, however, can be ascribed to the fact that some of them do not include the findings of most recent studies, the choice of variables taken into account in the comparisons, or the differences in the ways the term *explicit correction* is understood. Russell and Spada (2006), for example, did not find conclusive evidence for the superiority of either type of feedback, but it should be noted that not only is their analysis an early one, but it also includes studies of oral and written correction, which undoubtedly blurs the picture given the fact that correction of written errors can only be explicit (cf. Sheen 2010c; Sheen and Ellis 2011; see Sect. 3.3 in Chap. 3).[36][36] In fact, they equate the distinction between explicit and implicit feedback on errors in speech with that between direct and indirect feedback on written errors, which is highly problematic, as the learner is always cognizant of the corrective force of the indications included in a piece of writing, whether these provide the accurate forms or merely serve the purpose of highlighting the problems. Li's (2010) analysis, in turn, showed that although explicit CF is more effective in the short-term, implicit CF works a little better in the long run, while Lyster and Saito's (2010) syntheses of classroom-based research revealed that prompts, most of which tend to be rather explicit, were more conducive to learning than recasts, and the effects of both could not be distinguished from direct, overt, immediate correction, which was effective as well.[37][37] It should be noted that Lyster and Saito (2010) did not consider the difference between explicit and implicit feedback as such, but looked at the effects of prompts, recasts and explicit correction, which renders the interpretation provided by the present author somewhat speculative. Still, elements of explicitness can be found both in metalinguistic feedback and elicitations, which are prompts, and direct correction, with the effect that more overt CF options can be regarded as more likely to foster the acquisition of the targeted language forms. Another important finding of the studies by Li (2010) and Lyster and Saito (2010) is that recasting produced better results in the lab than in real classrooms, a tendency that is also recognized by Nicholas et al. (2001), and Spada and Lightbown (2009), who attribute it to learners' greater attention to TL forms in a contrived setting, the nature of one-to-one interactions, and the continuous focus on one or two targeted features. Clearly, if valid guidelines are to be provided for teachers, they should be first and foremost derived from classroom research as it is impossible to recreate idealized laboratory conditions in language lessons, taught to many learners and pursuing a number of instructional goals.

Support for the superiority of more explicit feedback types can be found, for example, in the studies conducted by Carroll and Swain (1993), Nagata (1993), Carroll (2001), Rosa and Leow (2004), Ellis et al. (2006), Ellis (2007), Sheen (2007a), Varnosfadrani and Basturkmen (2009), Pawlak (2011g), or Yilmaz (2012), which, however, differ along several dimensions, such as their setting and mode, the nature of the treatment, the presence of prior grammatical explanations, the operationalization of feedback types, and the outcome measures used (cf. Ellis et al. 2006). Carroll and Swain (1993) investigated the acquisition of English dative verbs by 100 Spanish adult learners performing mechanical exercises under five conditions: (1) direct metalinguistic feedback (i.e. information about the correct form), (2) explicit rejection (i.e. informing the learner of the commission of an error), (3) recasts, (4) indirect metalinguistic feedback (i.e. asking students if they are sure that what they have said is correct), and (5) no feedback. Subjects' performance on recall production tasks containing the items that were taught as well as new ones showed that although all types of correction were effective, the group supplied with direct metacognitive feedback outperformed all the others. 100 lower-intermediate ESL learners in Carroll's (2001) follow-up study performed exercises focusing on the formation of gerunds and the distinction between 'thing' and 'event' nouns in the same five conditions as those in Carroll and Swain's (1993) research project. The mastery of the targeted features was measured by means of a test which consisted of sentences eliciting verb-noun conversions, and it turned out that all the feedback conditions contributed to learning the forms which appeared in the text-manipulation activities, or item learning, but only the direct and indirect correction aided by metalinguistic information helped the learners generalize the rules to novel forms, thus constituting evidence of system learning.

In Nagata's (1993) computer-based study, 32 learners of Japanese completed controlled exercises which required them to respond to sentences generated by an imaginary character, and were supplied with feedback on passive structures, verbal predicates and particles. The feedback involved specifying what was missing or unexpected in the students' output, it was traditional or intelligent, and in the latter condition contained metalinguistic explanations. The results of a written test that followed the format of the treatment showed that the participants who had received explicit correction scored higher than their counterparts on particles, but no such effect was observed for verbal predicates. Rosa and Leow (2004) conducted another computer-based study which addressed the acquisition of contrary-to-the-fact conditional sentences in Spanish by 100 adult university learners representing an advanced level. The subjects worked on input-based jigsaw communicative tasks satisfying the condition of *task-essentialness* (Loschky and Bley-Vroman 1993), which required the use of the target feature (i.e. focused communication tasks) and varied in the degree of their explicitness. One group received explicit feedback on accurate and inaccurate utterances together with an opportunity to self-correct whereas the other was supplied with implicit feedback informing the learners whether or not the answer had been correct. The results of the pretests, immediate posttests and delayed posttests, which took the form

of multiple-choice recognition tests and written controlled production tests, indicated that higher levels of explicitness and thus awareness were associated with more effective learning of the targeted forms, although the students in the implicit groups did better than the controls. What the findings of the two computer-based studies also suggest is that explicit feedback is more conducive to language learning when the metalinguistic information is more detailed (cf. Ellis 2008).

The classroom-based study conducted by Ellis, Loewen and Erlam (2006), which was described in some detailed in the section devoted to research methodology, focused on the acquisition of the regular past tense '-ed' ending by 34 lower-intermediate adult ESL learners in New Zealand. The students in three classes were randomly assigned to three groups: a control group that continued with its normal instruction and two experimental groups which performed two half-hour communicative tasks, being provided with a prompt involving the use metalinguistic feedback or a recast. Although no statistically significant differences were observed on the immediate posttests, the gains were still evident, explicit feedback was more efficacious in the long run, and, what is particularly important, it affected the growth of mainly implicit knowledge and led to system learning. As the researchers argue, "[e]xplicit feedback is more likely than implicit feedback to be perceived as overtly corrective (…) [and it] seems more likely to promote the cognitive comparison that aids learning" (2006, pp. 363–364). Similar in design and also discussed in Sect. 4.3.1 is the empirical investigation reported by Ellis (2007), which, however, investigated the acquisition of the '-ed' ending in comparison to the comparative. Since the impact of explicit and implicit oral correction on the acquisition of these two linguistic features will be tackled in the section devoted to the role of mediating variables, suffice it to say that, on the whole, it was explicit feedback that was more effective.

The superiority of explicit CF was also reported by Sheen (2007a), who explored the value of direct correction coupled with metalinguistic explanation and recasts, supplied to 99 intermediate-level students of different nationalities as they were completing narrative tasks. The analysis of their performance on language analysis, speeded dictation, writing and error correction tests administered before the intervention, right afterwards and a month later demonstrated that the metalinguistic group outperformed the recast group, whose scores were not statistically significantly different from those of the control group. Varnosfadrani and Basturkmen (2009), in turn, designed a study in which 56 intermediate Iranian learners had their grammatical errors corrected explicitly and implicitly as they were retelling a previously written text. The statistical analysis of the scores on individualized posttests revealed that explicit feedback led to superior learning outcomes, although its effects were mediated by the participants' developmental readiness (see Sect. 4.3.3). Pawlak (2011g) examined the effects of implicit and explicit feedback on eliminating persistent errors in the pronunciation of a set of lexical items in the speech of 36 advanced Polish learners majoring in English in three intact classes, randomly designated as the control and two experimental groups. The students in the control group worked on regular activities, while those in the experimental groups underwent four sessions consisting of communicative

tasks during which they were supplied with explicit correction (i.e. correct forms were provided, often together with metalinguistic information) or implicit feedback (i.e. a recast or a clarification request). The analysis of the data collected on the pretest as well as immediate and delayed posttests, consisting of a reading passage and its oral summary on the basis of prompts, demonstrated that although both types of CF led to significant gains, explicit correction was more effective, particularly with respect to the development of explicit knowledge. Finally, Yilmaz (2012) compared the impact of explicit correction, understood as direct indication of the error and the provision of the accurate form, and recasts, operationalized as a targetlike reformulation of the inaccurate segment of the learner's output, on the acquisition of two Turkish morphemes (i.e. the plural and the locative) by 48 native speakers of English with no prior exposure to the TL. Additional variables taken into account in this study were the communication mode (i.e. face-to-face vs. synchronous CMC) and the salience of the instructional target (i.e. the plural was more salient than the locative). Explicit correction turned out to produce superior results, as measured by the participants' performance in production and comprehension tasks on immediate and delayed posttests, irrespective of the type of structure or the mode in which the intervention took place.

There are also some empirical investigations, however, which have failed to provide evidence for the greater effectiveness of explicit oral feedback, such as those carried out by DeKeyser (1993), Kim and Mathes (2001), Sanz (2003), Loewen and Nabei (2007), and Goo (2012).[38] DeKeyser's (1993) study involved 35 Dutch-speaking high school seniors learning French as a foreign language and it targeted a variety of features, mainly morphosyntactic in nature, thus examining in particular the contributions of unfocused error correction (see Sect. 3.5.3 in Chap. 3). The treatment spanned the whole school year and involved reformulation of the incorrect forms, which was rather inconspicuous and thus more similar to what transpires in native–native interactions, in one class, whereas it was more explicit in the other, since the students had to self-correct in reaction to an overt indication of the error. The analysis of the results of a fill-in-the-blank and three oral communication tests (picture description, interview and story-telling) administered at the beginning and at the end of the year did not reveal an advantage for either group, although it did provide evidence for the influence of individual variables, a point taken up in the next section. Kim and Mathes (2001) replicated the study by Carroll and Swain (1993) with 20 beginner and intermediate adult Korean learners of English as a second language but this time no significant differences between the explicit and implicit groups were observed. The failure to provide evidence for the greater effectiveness of more overt types of error correction

[38] Worth mentioning is also the study conducted by Adams, Nuevo and Egi (2012), which generated evidence for the link between the use of implicit CF in the form of recasts, output modifications, and gains in explicit knowledge, but failed to find such an advantage for explicit CF in the form of direct correction. It is not considered here in detail, however, because it examined peer correction during learner-learner interactions while the focus of the present section is on expert correction, whether delivered by the teacher, native speaker, or via the computer.

is also evident in the research project conducted by Sanz (2003), who investigated the provision of corrective computer-mediated feedback as part of processing instruction (VanPatten 2002) without prior FFI. In this case, no significant differences were found between the group which received explicit metalinguistic correction and the one which had the benefit of implicit feedback (i.e. an invitation to try one more time) on interpretation and production tests (i.e. sentence completion and written video retelling). Loewen and Nabei (2007) examined the acquisition of question formation by 66 university Japanese learners in two intact classes, designated as the control and experimental group. The participants in the latter completed two communication tasks in small groups, three of which were supplied with recasts, two with clarification requests, and two with metalinguistic feedback. The students in all the treatment conditions improved on a timed grammaticality judgment test intended as a measure of implicit knowledge and outdid the controls, but there was no significant difference in the effects of the three feedback types. In the last study reported here, Goo (2012) investigated the efficacy of recasts and metalinguistic feedback in the acquisition of the English 'that'-trace filter by 95 learners of English as a foreign language at a Korean university and found that the two CF strategies were equally effective, an outcome that she ascribes to the fact that the participants were not allowed to produce modified output.

The reason why these studies have not generated support for the greater utility of explicit feedback options may be related to such factors as their longitudinal design and the impact of extraneous variables (DeKeyser 1993), the small number of subjects receiving a variety of instructional treatments (Kim and Mathes 2003), the absence of grammatical explanation before the intervention and the comprehension-based nature of that intervention (Sanz 2003), the inclusion of an additional category of output-prompting feedback (Loewen and Nabei 2007), or the elimination of opportunities to engage in modified output production (Goo 2012). It should be underscored, though, that although these studies did not detect significant differences between the effects of implicit and explicit correction, none of them demonstrated that the former confers a greater advantage than the latter, a fact that suggests that covert error treatment can at best, under favorable conditions, work only as well as overt CF.

Studies of input-providing and output-prompting feedback

The empirical evidence is even more compelling in the case of the distinction between input-providing and output-pushing corrective feedback, since the findings of virtually all the classroom studies which have compared the value of these two options demonstrate that the requirement for uptake and self-correction is more effective, an outcome which is in line with the results of most descriptive research considered earlier (e.g. Lyster and Ranta 1997; Lyster 1998b; Panova and Lyster 2002). This fact is acknowledged, once again, by the authors of the most recent overviews of research into error correction, as is evident, for example, in Sheen's (2010a, p. 173) pronouncement that "(…) output-prompting feedback is more effective than input-providing feedback, at least in the case of learners who

have begun to acquire the target feature", and Sheen and Ellis's (2011, p. 607) evaluation that "[i]n general, the types of CF that have the greatest impact on L2 development in a classroom context are those that are explicit and output-prompting rather than implicit and input-providing". Such assumptions did not find reflection in Mackey and Goo's (2007) meta-analysis, which showed that interactional CF without opportunities for output modifications works better in the short and long run than feedback which abounds in such opportunities. As the researchers acknowledge, however, this may have been due to the fact that their occurrence was intentionally blocked in a number of studies, and it should also be pointed out that they did not specifically isolate recasts and prompts as distinct from other types of feedback, with the effect that the overall picture is far from clear. By contrast, the research synthesis and meta-analysis by Lyster and Saito (2010), which looked separately into the effects of prompts, recasts and explicit correction, yielded significantly larger effects sizes for output-pushing feedback in comparison to input-providing correction in a classroom setting. Obviously, the effectiveness of the two types of feedback is also likely to be a function of whether they are directed at new forms or such that are partly acquired, a point made by Panova and Lyster (2002), Nassaji (2007b) or Sheen (2010a) and raised in some of the studies reported below, whether the intervention occurs in a classroom or a laboratory, a variable identified by Spada and Lightbown (2009), Li (2010), and Lyster and Saito (2010), whether the acquisition of the feature is aided by individual, linguistic and contextual variables, and whether learners are sufficiently engaged in the corrective sequence.

Empirical support for greater effectiveness of output-prompting feedback in comparison with input-providing error correction comes from studies that have been undertaken by Lyster (2004), Ammar and Spada (2006), Ammar (2008), Dilans (2010), Yang and Lyster (2010), and Pawlak and Tomczyk (2013).[39] As is the case with research into the contributions of explicit and implicit oral CF, they also differ with respect to a number of design features, such as, for example, the number and characteristics of the subjects, the choice of the instructional target, the nature and duration of the treatment, the operationalization of the corrective moves, the presence of immediate instruction focusing on the targeted features, or the ways in which learning outcomes are measured, all of which can have a major bearing on the results.

In one of the first studies representing this line of inquiry, Lyster (2004) focused on the acquisition of grammatical gender in French, or, more specifically,

[39] It is worth pointing out that Goo and Mackey (2013) are rather skeptical of the value of such studies, arguing that they suffer from methodological flaws, related, for example, to the failure to control for modified output opportunities, the comparison of a single variable with multiple variables, the presence of form-focused instruction, as well as unclear contributions of prior knowledge and out-of-class exposure. In the opinion of Lyster and Ranta (2013, p. 181), however, these concerns are overstated, for the reason that applied SLA researchers should be "(…) concerned with investigating SLA phenomena that are of practical significance to teaching and with conducting research in such a way that it is transparently relevant to teachers".

selected noun endings that are reliable predictors of gender attribution, by 179 early immersion students aged 11–12. The learners were divided into four groups, each consisting of two intact classes, one of which was the control group and the remaining three experimental groups, receiving about 8–10 h of FFI accompanied by recasts, prompts, or no feedback. The students' progress was measured by means of a pretest, immediate and delayed posttests, which consisted of both written tasks (i.e. a binary-choice test and a text-completion test) and oral tasks (i.e. an object-identification test and a picture-description test). Although all the experimental participants benefitted from the instruction, prompts turned out to be more efficacious than recasts and no feedback, with the advantage conferred by output-pushing correction being the most evident on the written tasks, whereas the performance of those receiving recasts and no feedback was comparable. In a recent follow-up to this research project, Yang and Lyster (2010) employed a similar design to explore the acquisition of regular and irregular verbs by 72 Chinese adults learning English as a foreign language. While the control group worked on communicative tasks, the two experimental groups were additionally provided with 2 h of form-focused instruction over the period of 2 weeks coupled with either prompts or recasts. The students' performance on dictogloss, question-and-answer, and picture-cued narrative activities used on the pretest, immediate and delayed posttests also demonstrated the superiority of output-pushing over input-providing feedback, a finding that, in the words of Yang and Lyster (2010, p. 259), "(…) can be attributed to the self-repair that prompts consistently elicited as well as to their greater saliency during oral production activities".

In another classroom-based study, Ammar and Spada (2006) investigated the value of prompts and recasts in assisting the acquisition of third person possessive determiners (i.e. 'his' and 'her') by 64 learners at different proficiency levels enrolled in intensive ESL classes in Canada. They were divided into three groups, all of which received instruction in the target features broadly adhering to the PPP procedure (i.e. the provision of a rule of thumb, followed by semi-controlled and free practice) and then took part in 11 practice sessions, 30–45 min in length, including communicative activities aimed at the production of the PD. While errors in the use of these items were left uncorrected in the control group, one experimental group received recasts and the other was supplied with prompts in the form of metalinguistic clues, elicitations and repetitions, but not clarifications requests. The subjects' performance on oral (i.e. picture description) and written (i.e. passage correction) tests, administered immediately before the treatment, right afterwards and 4 weeks later, provided evidence for the greater effectiveness of prompts than recasts for lower proficiency learners and comparable effects of the two feedback types for higher proficiency students.[40] The data obtained on the oral picture description task were subsequently reanalyzed by Ammar (2008) with respect to the subjects' movement through the developmental stages in the

[40] It should be explained that proficiency was defined here as the participants' mastery of the targeted features on the pretest rather than in general terms.

acquisition of possessive determiners in a study that was described in the section devoted to methodological issues. His findings mirror to a large extent those of the previous research project since it turned out that it was prompts and not recasts that allowed learners to move to more advanced stages of the scale, with this effect being the most pronounced for lower levels of proficiency.

The findings speaking to the greater advantage of output-prompting corrective feedback have also been corroborated in research projects dealing with target language subsystems other than grammar. Dilans (2010), for instance, used a pretest, posttest, and delayed posttest design to examine the acquisition of lexical items by 23 adult ESL learners at an intermediate level, assigned to one control and two experimental groups. The members of the latter participated in a 20-min four-step treatment activity (i.e. reading word definitions, provision of contextual questions or statements for the target words, creating sentences with these words, and completing a picture-labeling task), being provided with prompts or recasts. The application of a three-dimensional vocabulary development model (cf. Henriksen 1999), which involved measuring partial/precise knowledge, depth of knowledge, and receptive/productive knowledge, showed that although the effects of these two feedback types were comparable in the short term, prompts were more beneficial in the long run and they enabled the participants to advance in all the three dimensions of vocabulary knowledge.

There are also some empirical investigations which have failed to confirm the advantage of prompts over recasts and these have been the laboratory studies conducted by McDonough (2007), and Lyster and Izquierdo (2009), the classroom-based research project carried out by Pawlak and Tomczyk (2013), and the computer-aided experiments undertaken by Loewen and Erlam (2006), and Sauro (2009). McDonough (2007) investigated the emergence of past simple tense activity verbs in the output of 106 university EFL learners, who carried out three communication tasks with a native speaker and were provided with clarification requests (i.e. a kind of prompt) or recasts whenever they made a mistake in the use of the targeted feature. They were randomly assigned to one of two conditions in the two phases of the treatment, that is clarification requests or no feedback in phase one, and recasts or no feedback in phase two. The analysis of the participants' oral performance on the pretest and three posttests, which involved the identification of simple past activity verbs that were not produced prior to the intervention, revealed that both feedback moves were equally facilitative of acquisition. In the study by Lyster and Izquierdo (2009), 25 intermediate-level university learners of French as a foreign language were supplied with 3 h of instruction on grammatical gender over the period of 2 weeks. They also took part in two 30-min dyadic interactions with native and near-native speakers of French outside the classroom, during which their incorrect uses of the targeted features triggered the provision of corrective feedback in the form of prompts or recasts. The learning outcomes were assessed by means of two oral production tasks as well as a computerized reaction-time binary-choice test which served as a measure of accuracy and fluency. The analysis of the scores demonstrated that output-prompting and input-providing feedback moves were equally effective in

promoting language development, a finding that the researchers explain by suggesting that "(…) learners receiving recasts benefited from repeated exposure to positive exemplars as well as from opportunities to infer negative evidence, whereas learners receiving prompts benefited from repeated exposure to negative evidence as well as from opportunities to produce modified output" (2009, p. 487). Pawlak and Tomczyk (2013) investigated the acquisition of present and past simple passive constructions by 39 Polish senior high school learners who were familiar with the structure, but had difficulty in using it. While the control group worked on regular activities, the students in two experimental groups completed three 30-min communicative activities in three lessons spanning the period of 1 week, receiving either recasts or clarification requests on errors in the use of the targeted feature. The analysis of the students' performance on oral and written description tasks failed to detect significant differences between the two types of feedback and showed that the input-based group improved more on the oral measure. Both Loewen and Erlam (2006) and Sauro (2009) compared the contributions of recasts and metalinguistic prompts in task-based synchronous CMC via text-chat and found no significant differences in their effect on the learning of the past tense '-ed' marker and the use of the zero article with abstract nouns, respectively. One explanation for the findings of all of these studies is that some of them took place in out-of-class conditions (i.e. McDonough 2007; Lyster and Izquierdo 2009) or computer-aided environments (i.e. Loewen and Erlam 2006; Sauro 2009), where the corrective force of recasts is easier to discern, while others operationalized prompts as clarification requests which, like recasts, can be relatively implicit and not sufficiently salient (i.e. McDonough 2007; Pawlak and Tomczyk 2013). It should also be stressed that input-providing feedback was never superior to output-prompting correction, but only produced similar outcomes.

4.3.2.4 Reflections

The picture that emerges from the discussion of the findings of research into the effects of different types of oral correction is exceedingly complex and it does not easily lend itself to clear-cut interpretations, with the consequence that great circumspection should be exercised about using the available empirical evidence as a basis for pedagogic proposals. On the one hand, one would be tempted to suggest, in line with the results of the majority of descriptive and experimental studies, that, in order to be most beneficial, corrective feedback should be focused, explicit, output-prompting, and consistently provided over an extended period of time (cf. Pawlak 2010b). On the other hand, however, it would be imprudent to take no heed of the fact that more implicit, input-providing corrective techniques, such as recasts, also contribute to language development, even if their effects are more modest, they may be more useful for internalizing new linguistic features rather than increasing control over such that learners have partly acquired, they may be of greater relevance to more advanced learners, and their impact may hinge upon the presence of prior instruction or the broader educational context. It

should also be kept in mind that, as Nassaji (2007b, 2009), among others, has so aptly demonstrated, there are different types of recasts and prompts, and these corrective moves can vary widely in relation to their explicitness and implicitness as well as the requirement for uptake and self-correction, not to mention the fact that in many cases they may be used in clusters, as when the teacher resorts to an elicitation when the learner fails to notice and respond to a recast. As was pointed out in Sect. 3.5.4.1 in Chap. 3, one might also ponder whether the effort expended on teasing apart the effects of explicit and implicit feedback and input-providing and output-inducing correction in separation is likely to produce the expected payoff given the fact that the two distinctions overlap in at least some respects.

These considerations point to potentially extremely robust lines of inquiry as studies can be designed that would investigate the effects of feedback moves of various characteristics, the interfaces between explicitness/implicitness and opportunities for uptake and repair, as well as the contributions of various constellations of corrective techniques, such as those examined by Pawlak (2006a, 2008b). What also has to be taken into account are the realities of foreign language classrooms, which may dictate that a consistent, prolonged focus on a single feature may not be practicable, and unplanned, extensive correction may have to be used on many occasions, which provides a rationale for undertaking research endeavors in this area. Last but definitely not least, whatever corrective move or a combination of such moves is selected by researchers or classroom teachers, the contribution of pedagogic intervention will be mediated by the influence of a wide array of individual, linguistic and contextual variables as well as the degree of learners' cognitive and affective response. It is these issues that are the focus of the following subsections.

4.3.3 The Impact of Mediating Variables

As illustrated in Fig. 4.1, the impact of error correction is mediated by a host of individual, linguistic and contextual variables, all of which can render different feedback strategies more or less efficacious and, therefore, should become an object of vigorous empirical scrutiny. This line of inquiry, however, is still in its infancy, the available evidence is rather scarce and the studies conducted so far have addressed but a fraction of the possible influences on just a few of the possible techniques of error correction that practitioners have at their disposal, with no attempts having been made to the best knowledge of the present author to explore the joint contributions of constellations of various factors. The present section provides a brief account of the research findings pertaining to the role of individual, linguistic and contextual factors in determining the effects of oral CF (see Table 4.5), and points to future research directions in these areas. Since most of the empirical investigations referred to here have also explored the effectiveness of feedback moves and, as such, have been discussed in some detail above, the specifics concerning research design are largely ignored and the main emphasis is placed on reporting the results that are pertinent to the impact of the relevant moderator variables.

Table 4.5 Studies exploring the impact of mediating variables on the effects of oral error correction

Individual factors	Linguistic factors	Contextual factors
DeKeyser (1993)	Long and Ortega (1997)	Ellis et al. (2001)
Nagata (1993)	Long et al. (1998)	Han (2002)
Mackey and Oliver (2002)	Mackey and Philp (1998)	Oliver and Mackey (2003)
Mackey et al. (2002)	McDonough and Mackey (2006)	Sheen (2004)
Ammar and Spada (2006)	Loewen and Erlam (2006)	Pawlak (2004b)
Sagarra (2007)	Ellis (2007)	Seedhouse (2004)
Sheen (2007a)	Ammar (2008)	
Trofimovich et al. (2007)	Varnosfadrani and Basturkmen (2010)	
Lai and Roots (2008)	Spada and Tomita (2010)	
Sheen (2008)	Yang and Lyster (2010)	
Lyster and Saito (2010)	Yilmaz (2012)	
Mackey et al. (2010)		
Goo (2012)		
Sagarra and Abbuhl (2013)		
Gass et al. (2013)		

The importance of *learner-related factors* in the process of form-focused instruction, of which the provision of corrective feedback is an integral part, is recognized by Ellis (2008, p. 895), who writes that "(…) it would seem likely that learners differ in the kind of instruction they are best equipped to benefit from". In the case of the treatment of oral errors, researchers have examined the mediating effects of such variables as *aptitude*, taking into account its subcomponents and the recent reconceptualization of the construct in terms of the supremacy of *working memory*, *anxiety*, *motivation*, *attitudes*, *beliefs*, *proficiency level* and *age*. In an early study seeking to establish a link between individual learner variables and oral error treatment, DeKeyser (1993) examined the interfaces between long-term reliance on explicit and implicit feedback and such factors as language aptitude, operationalized as grammatical sensitivity, extrinsic motivation, measured by means of self-made Likert-scale statements, classroom anxiety, determined with the help of selected items from a tool designed by MacIntyre and Gardner (1991), and previous achievement, understood as learners' performance before the treatment. The results showed that although correction during communicative activities did nor interact with grammatical sensitivity, it was related to the remaining factors. To be more precise, students with low extrinsic motivation responded better to explicit feedback while those with high extrinsic motivation benefitted more from implicit error correction, learners characterized by lower anxiety levels did better on a written grammar test after the instruction, and participants with higher pretest scores outperformed those with lower scores on the same measure on the posttest.

More recently, the role of different components of aptitude has been investigated in the research projects undertaken, among others, by Mackey et al. (2002),

Sagarra (2007), Sheen (2007a), Trofimovich et al. (2007), Lai and Roots (2008), Mackey et al. (2010), Goo (2012), Sagarra and Abbuhl (2013), and Gass et al. (2013). In the first of these, Mackey et al. (2002) set out to explore the influence of working memory capacity, established on the basis of the scores on a phonological short-term memory test and a listening span test, on the participants' ability to notice and benefit from interactional feedback in the form of recasts. It turned out that high WM capacities facilitated the noticing of the feedback, a trend that was mediated by developmental readiness, because learners with high WM capacity representing lower developmental levels were better in this respect than those at higher developmental levels. When it comes to learning outcomes, while low WM learners were more successful immediately after the intervention, they did not retain the initial gains on the delayed posttests 2 weeks later, while high WM learners manifested progress at that time, a finding that the researchers ascribe to the fact that the latter were better able to make cognitive comparisons that enabled long-term restructuring of the interlanguage system. Sagarra (2007), in turn, demonstrated that working memory capacities, established by means of a reading span test, allowed beginner learners of Spanish in the experimental group to accrue more benefits from computer-delivered recasts, as evidenced in their more accurate performance on written tests and in face-to-face interactions, and the fact that they were able to make greater amounts of targetlike output modifications. This finding was corroborated in another study of computer-administered corrective feedback undertaken by Sagarra and Abbuhl (2013), with the caveat that in this case the contribution of working memory was mediated by the modality in which CF was given, that is WM capacity was positively associated with oral, but not written recasts, irrespective of the presence of enhancement.

In another study, Sheen (2007a) investigated the effects of recasts and metalinguistic correction in teaching English articles as a function of language aptitude, measured by means of a language analysis test (Schmitt et al. 2003), and found a positive relationship between the immediate and delayed test scores in the metalinguistic group, which manifested superior performance, but not in the recast group. A very different finding was reported by Goo (2012), since in her study aptitude, operationalized as working memory capacity, proved to mediate the effects of recasts but not metalinguistic feedback. She attributes this result to greater cognitive effort involved in responding to implicit CF, arguing that "[t]he noticing of recasts (…) necessitates cognitive control of attentional resources because it requires learners to engage in cognitive comparisons" (2012, p. 465).[41] Trofimovich et al. (2007) focused upon the mediating role of phonological memory, working memory, attention control, and analytical ability, and, although they failed to provide evidence for a relationship between these variables and the noticing of recasts, the scholars demonstrated that they are reliable predictors of production accuracy. The results led them to conclude that "(…) cognitive constructs

[41] The contrasting results of the studies conducted by Sheen (2007a) and Goo (2012) are likely to stem from the fact that they operationalized and measured aptitude in different ways. Another possible explanation is that they involved different instructional targets.

of attention, memory, and language aptitude 'shape' L2 interaction on a minute-by-minute basis" (2007, p. 192). The impact of working memory was also observed by Lai and Roots (2008) in their study of the importance of the contingency of recasts in the course of text-based CMC, since they found that learners with higher WM capacities fare better with the noticing of non-contingent recasts. A study by Mackey et al. (2010), the design of which was presented in Sect. 4.3.1, showed a positive relationship between high scores on a verbal WM span test, particularly its recall component, and the production of modified output in a communicative task. Finally, Gass et al. (2013) failed to find a role for working memory, as measured by a reading span task, for the effects of corrective feedback, but identified such a role for inhibitory control (i.e. the ability to suppress interfering information and focus on the task at hand), as measured by the Stroop test (Stroop 1935). As they explain, "[b]ecause so much information is at play during an interaction, the ability to suppress a certain amount of that information is necessary. (…) those learners who were better able to take relevant information from the interaction and integrate it into their developing language system were those who were better able to suppress information". They emphasize, however, that "[t]his ability is, of course, not unrelated to working memory capacity, nor is it unrelated to one's ability to suppress L1 information (…)" (2013, p. 108).

As regards the empirical evidence for the mediating impact of other individual factors, it is in most cases rather tenuous and sometimes based on the results of single studies. One such variable is the level of proficiency, usually interpreted in terms of the pretest scores or indices of task performance, with the research projects conducted, for example, by Ammar and Spada (2006), Trofimovich et al. (2007), and Ammar (2008) demonstrating that learners performing better on such measures are more likely to benefit from recasts than those who are less advanced. No such constraints, however, have been identified for prompts which appear to work equally well irrespective of learners' level of advancement. As Ammar and Spada (2006, p. 566) point out, "(…) there is not one CF technique that is ideal or (…) one size does not fit all. The effectiveness of any CF technique needs to be evaluated in relation to learners' proficiency level". Research findings also indicate that younger learners may benefit from the provision of oral corrective feedback more than older learners, especially if it is of the implicit type (cf. Mackey and Oliver 2002; Lyster and Saito 2010), and lower levels of language anxiety may be needed for recasts to be effective, both in terms of the production of modified output and long-term language development (Sheen 2008). Finally, Sheen (2007a) found that learners' positive attitudes towards correction are significantly related to learning gains in the case of metalinguistic feedback, but not recasts, whereas Nagata (1993) observed that the superior effects of explicit correction in comparison with implicit correction may be attributed to the participants' predilection for being supplied with metalinguistic information.

There are few studies which have specifically set out to explore the effectiveness of oral error correction as a function of *linguistic factors*, although some conclusions in this respect can also be drawn on the basis of the results of research into the effects of different CF moves reviewed in the preceding section. One such factor, which in fact falls somewhere in between individual and linguistic variables, is *developmental*

readiness, typically understood as learners' ability to perform the syntactic operations required for the accurate production of the targeted form.[42] The studies carried out, among others, by Long and Ortega (1997), Long et al. (1998), Mackey and Philp (1998), Ishida (2004), Loewen and Erlam (2006), and McDonough and Mackey (2006) have shown that error correction is conducive to acquisition only on condition that learners have reached the requisite stage in a developmental sequence (e.g. for questions). Interesting insights also come from research projects conducted by Ammar (2008), who found that prompts were more effective than recasts in facilitating movement to the more advanced stages of the developmental scale in the acquisition of the third person possessive determiners in English, as well as Varnosfadrani and Basturkmen (2010), who demonstrated that explicit CF may be more beneficial for developmentally early TL features, while implicit correction may work better for developmentally late forms. It is also possible to frame the discussion of the mediating role of linguistic variables taking as a point of reference the distinction between *simple* and *complex linguistic features*, an approach embraced by Spada and Tomita (2010) in their meta-analysis of the interaction between type of instruction, including corrective feedback, and type of language form (see Sect. 4.2.2 for possible interpretations of the notion of complexity). The comparison of effect sizes indicated that explicit FFI and, what logically follows, also more explicit CF types (e.g. metalinguistic information), are more effective than implicit FFI, together with more implicit CF techniques (e.g. recasts), both with respect to controlled production (i.e. explicit knowledge) and spontaneous language use (i.e. implicit knowledge).

When it comes to research projects that have addressed this issue specifically in relation to error correction, Ellis (2007) examined the impact of recasts and metalinguistic feedback on the acquisition of the English comparative and the regular past tense 'ed' ending, the first of which he regarded as posing a greater learning challenge. He found that while the effects of implicit correction did not depend on the linguistic target, explicit feedback proved to be more beneficial in the case of the more difficult structure (i.e. comparatives), with its effects being immediate here and delayed for the past tense. Yang and Lyster (2010), in turn, demonstrated that prompts work better than recasts in increasing the accuracy of use of regular English past tense verbs, while the effects of the two cannot be distinguished in the case of irregular verbs. Using the distinction originally introduced by Skehan (1998), the researchers interpreted these findings as indicating that "(…) during online communication, prompts more than recasts trigger access to the rule-based system, whereas recasts and prompts alike trigger access to the exemplar-based

[42] Indeed, it is possible to view developmental readiness as both an attribute of the learner, as he or she has to be psycholinguistically ready to internalize a particular structure or capable of performing the requisite processing operations, or as a property of that structure, since some linguistic features may be developmentally early and others late, and there are also such that are variational in nature, i.e. they are not constrained by developmental stages or processing operations (Pienemann and Johnston 1986). The decision to regard developmental readiness as a linguistic factor reflects the way in which it was classified in Sect. 4.2.2, where the framework for investigation error correction was introduced.

system" (2010, p. 259). Interesting observations have also been offered in this respect about value of explicit and implicit feedback options, and it appears that the former are more likely to contribute to the occurrence of *system learning* rather than only *item learning* (e.g. Carroll and Swain 1993; Ellis et al. 2006). Evidence is also forthcoming that prompts work better for *partially acquired items* whereas recasts are more effective in helping learners internalize *new language forms* (Panova and Lyster 2002; Nassaji 2009). Additionally, output-prompting feedback is more useful for errors involving lexis and morphosyntax, while input-providing correction is more beneficial for phonological errors, at least in some contexts (e.g. Lyster 1998b; Tseng 2004), and learners are more successful in detecting inaccuracies in lexis or phonology than in morphology or syntax in response to a recast (Carpenter et al. 2006; Trofimovich et al. 2007). Finally, there is a possibility that the *salience* of the targeted structure plays a much more important role that the application of a specific corrective feedback strategy, with more salient TL features being more amenable to error correction that less salient ones (cf. Yilmaz 2012).

Our knowledge is the most limited with respect to the moderating effects of *contextual variables*, both at the *macro* and *micro level*, which is perhaps the corollary of the fact that it is difficult to include factors of this kind in the design of experimental and quasi-experimental studies dealing with the contributions of specific CF types. When it comes to the influence of the broader *educational context*, Sheen (2004) compared the patterns of corrective feedback in four instructional settings, that is French immersion, ESL in Canada, ESL in New Zealand and EFL in Korea, all of which were communicative, but differed along such dimensions as participants' age and proficiency level as well as the pedagogic focus. The main conclusion was that the extent to which recasts lead to uptake and successful repair is heavily dependent on a particular context, with this feedback move working better when it is more salient, which happens in situations when it is partial and reduced, and learners are expected to pay attention to linguistic form rather than only focus on meaning conveyance. Another contribution to this line of inquiry is the study by Lyster and Mori (2006), which examined the immediate effects of explicit correction, prompts and recasts, also operationalized in terms of uptake and repair, in French immersion and Japanese immersion. It was found that prompts were more effective in the former and recasts in the latter, an outcome that the researchers attributed to the inclusion of a clear code-focused component in the Japanese immersion classroom alerting students to the formal aspects of the target language, and that provided a basis for the formulation of the Counterbalance Hypothesis (see Sect. 2.4.1.3 in Chap. 2).

Some light on the influence of contextual micro factors on the effectiveness of oral correction has been shed by a study undertaken by Oliver and Mackey (2003), the design of which was described in the section devoted to methodological issues. They observed that the occurrence of correction and the learners' response to the teacher's feedback moves differed considerably depending on the *situation in which a particular exchange occurred*, with the provision of CF being the most frequent in explicit language-focused and content exchanges, and

learners utilizing the negative evidence most often when the focus was on the TL code, rarely when it was on content, and never when managerial issues were the main concern. Further insights into the characteristics and effects of oral error correction come from Pawlak (2004b), who examined the two issues with respect to the phase of the lesson, the nature of a particular activity and the provision of instruction by native and non-native teachers, as well as Seedhouse (2004), who explored the participants, trajectories, types and focus of repair in relation to the characteristics of form-and-accuracy-contexts, meaning-and-fluency contexts, and task-oriented contexts. There is also some evidence that the effects of different types of corrective feedback may hinge upon such factors as the presence of prior instruction targeting a given area, the focused nature of the pedagogic intervention, and the prolonged character of the instructional treatment (cf. Ellis et al. 2001; Han 2002).

Although the outcomes of all of these studies have no doubt extended our understanding of how the contributions of corrective feedback are moderated by individual, linguistic and contextual variables, it is obvious that researchers have barely begun to scratch the surface in these areas and many more empirical investigations are needed to determine what really lies beneath. As for learner-related factors, it is necessary, for example, to look even more closely at the role of different components of language aptitude, especially working memory capacity, as well as to scrutinize the impact of different aptitude complexes or combinations of specific aptitudes (Snow 1987; Robinson 2002, 2005). This will allow researchers to gain insights into the interdependence of aptitude and context, understood as different types of corrective moves and constellations thereof, or what is known in the literature as *aptitude-treatment interaction* (ATI) (cf. Snow 1988, 1998). Much more research is also needed into the factors that have already been shown to mediate the effects of correction, such as age, attitudes, beliefs, anxiety or proficiency, with the important caveat that a more differentiated view of these constructs should be adopted (i.e. different subcomponents and types should be distinguished), different populations should be examined, and attempts should be made to establish the joint influence of various clusters of individual, linguistic and contextual variables. There are also other potential influences that have yet to be tapped, such as, for example, differences in cognitive and learning styles (e.g. field-independent vs. field-sensitive), willingness to communicative, task motivation (Dörnyei and Tseng 2009) or gender. When it comes to linguistic factors, there is a need to explore the effects of various types of correction on the acquisition of other linguistic features differing in their complexity, particularly in terms of explicit and implicit knowledge, the occurrence of system learning and item learning, and the scope and speed of advancement along developmental sequences. Finally, despite the methodological challenges it might pose, substantially more emphasis should be laid on investigating the mediating role of contextual factors at the macro and micro level, conceptualized not only in terms of the instructional setting, the nature of an exchange or the focus of a segment of a lesson, but also the place of corrective feedback in instructional sequences, group dynamics, or the perception of the intentions of the corrector.

4.3.4 The Nature of Learner Engagement

Although learners' engagement with oral corrective feedback can take the form of behavioral, cognitive and affective response (see Fig. 4.1), only studies tapping the second of these are overviewed here because the occurrence of uptake has already been dealt with in the section devoted to the discussion of the effectiveness of feedback moves and, to the best knowledge of the present author, none of the empirical investigations carried out so far have targeted the affective dimension of engagement with oral error correction. As expounded in Sect. 4.2.3, *cognitive response* is usually understood as the degree of learners' *attending to* and *noticing* corrective information, although these two concepts can surely be operationalized in different ways. Most of the research conducted to date has focused on *recasts*, which should hardly come as a surprise given the fact that the salience of these largely implicit reformulations is problematic, and it has aimed to determine the connection between the *occurrence of noticing*, *immediate uptake*, *output modifications*, *self-repair* and, more recently, *longer-term learning outcomes*. Attempts have also been made to compare l*earners'* and *teachers' perceptions of feedback moves* with an eye to determining the extent to which they overlap and whether the potential divergences may impinge upon behavioral responses and learning outcomes.

In one of the first empirical investigations representing this line of inquiry, Mackey, Gass and McDonough (2000) provided evidence that greater noticing of corrective moves in the form of recasts and negotiation translates into greater output modifications, because the participants were able to successfully identify the linguistic focus of 66 % of the feedback episodes which resulted in such adjustments, whereas they were unaware of the target of the intervention in 89 % of episodes in which they failed to modify the original utterance. These results have been corroborated by Révész (2002), who found that learners were more likely to respond to recasts when they interpreted them as negative evidence about morphosyntax rather than as mere comments on the content of the preceding utterances, and such awareness was present in about 80 % of cases when uptake was accompanied by successful repair. More recently, Egi (2010) also demonstrated with the help of stimulated recall reports that the production of uptake was more likely to take place in situations when learners perceived the corrective force of recasts, while the occurrence of successful self-correction was a function of both such a recognition and their cognizance of the existence of a mismatch between their output and the target language form, or their ability to notice the gap (Schmidt and Frota 1986). Bao et al. (2011), in turn, compared the rate of noticing, as measured by means of performance (i.e. uptake) and introspection (i.e. stimulated recall), and reported that the latter is better able to capture noticing which cannot be reduced to observable behavioral responses in the form of immediate output modifications. An additional finding was that the characteristics of recasts may play a role in triggering noticing since only recasts with rising intonation proved to be the sole significant predictor of learners' awareness. The relationship between the properties of recasts and their contribution to learners' recognition of gaps in their interlanguage knowledge was also investigated

by Kim and Han (2007), who uncovered not only that corrective recasts fare better than communicative recasts, but also that simple reformulations work better than complex recasts, and that complexity is overridden by the linguistic target (i.e. phonological, lexical or morphosyntactic) as well as the form that the recast takes (i.e. isolated or incorporated, declarative or interrogative). An important extension to research on the interpretation of feedback is the study carried out by Carpenter et al. (2006), who employed stimulated recall and think-aloud protocols to tap learners' perceptions of recasts and repetitions during task-based interaction, but manipulated video clips in such a way that one group of subjects viewed the entire feedback episodes, while the other was deprived of access to the erroneous utterances that set off corrective reactions. The analysis revealed that the learners who had no access to the incorrect output were significantly less likely to distinguish recasts from repetitions, with the participants in both groups relying primarily on verbal rather than non-verbal clues in making their interpretations.

Particularly interesting are the results of the few empirical investigations which have moved beyond examining the relationship between noticing, uptake and output modifications by seeking to determine whether learners' awareness of the focus of CF is related to second language development, as well as such that have compared learners' and teachers' interpretations. As to the first category, worth mentioning are research projects by Mackey (2006a) and Egi (2007). The former showed that noticing, defined as the awareness of the gap between one's own output and the correction version, and measured on the basis of learner comments in online journals, stimulated recall interviews and questionnaires, was positively related to subsequent acquisition as the participants who correctly recognized the corrective intention of the teacher manifested more effective learning of the English question forms.[43] The latter demonstrated that the students who received recasts in interaction with native speakers performed better on immediate customized posttests when they had interpreted these reformulations on immediate and stimulated reports as linguistic information, or, more precisely, a combination of positive and negative evidence rather than meaning-focused confirmations of their contributions.

The differences in learners' and teachers' perceptions of corrective moves have been investigated, among others, by Kim and Han (2007) and Yoshida (2010). The findings of Kim and Han's (2007) study, which was described at length in the section concerning research methodology and mentioned above, indicate that there was considerable overlap between teachers' intent in providing recasts and learners' interpretation thereof, students perceived recasts in the same way as recipients or observers, and their noticing the gap was a function of both the intentions of the teachers and the complexity of the reformulations. The study conducted by Yoshida (2010) aimed to determine whether learners' response to corrective feedback is tantamount to noticing, whether teachers consider such responses to be evidence of noticing, and

[43] Such effects, however, were less clearly visible for the other two targeted forms, that is plurals and past tense, which shows that learners' cognitive response interacts with linguistic factors (Egi 2007).

whether there are discrepancies between teachers' and learners' perceptions of corrective moves and the responses they produce. Using audio-recordings and transcripts of classroom discourse, observation notes and stimulated recall, she found that the occurrence of uptake does not guarantee noticing and understanding of corrective information since learners often provide a response to avoid social strain and embarrassment, and teachers manifest a penchant for overestimating better students assuming that they have attended to and comprehended the feedback move. As Yoshida (2010, p. 311) comments, "[t]he results suggests (*sic!*) that learners' noticing of teachers' CF and their responses to it (…) are associated with the teachers' perceptions of individual learners, socio-affective factors such as learners' emotional states, and the learners' perceptions of classroom interactions, as well as the type of CF".

Evaluating the available empirical evidence on learner engagement with the correction of oral errors, it should first be emphasized that huge strides have been made in this area over the last few years, both with respect to the issues pursued and the research methodology used. Nevertheless, much still remains to be done especially when it comes to probing the affective dimension of such engagement, as well as obtaining more insight into the admittedly complex interactions between learners' behavioral, cognitive and affective responses to the corrective reactions that they are exposed to. It also makes sense to extend research into noticing beyond recasts so that it also covers different realizations of other type of corrective feedback, such as prompts, to set more store by exploring the links between different forms of engagement and longer-term learning outcomes, and to investigate how attention and noticing the gap can be modulated by various individual, linguistic and contextual variables, such as those discussed in the preceding subsection.

4.4 Research into Written Error Correction

In comparison to empirical investigations of oral error correction, research into the effects of written feedback has always been less theory-driven and more preoccupied with the concerns of practitioners who are naturally interested in improving learners' ability to create texts in a foreign language that are not only accurate when it comes to the use of grammar and lexis, but are also, or perhaps even mainly, well-organized and include appropriate content with respect to a given topic. As Sheen (2010c, p. 204) elucidates, "(…) whereas SLA researchers have been primarily concerned with CF in relation to how it affects learning processes and outcomes, such as noticing and changes in linguistic competence, L2 writing researchers have been primarily concerned with how CF can improve writing performance". The roots of these divergences can be traced to the fact that research into writing in a second language is much more than a subset of SLA studies because it is informed as well by language, composition, rhetoric, communication and cultural studies, to name but a few, with the effect that it has crossed disciplinary boundaries and can therefore be approached from sometimes disparate perspectives (cf. Leki et al. 2006; Matsuda 2006; Matsuda and Silva 2010). In effect, while some scholars, who can be referred

to as L2 writing researchers, have elected to focus on the realities of composition classes (e.g. Ashwell 2000; Ferris 2006), others, who can be labeled SLA researchers, have extended the work on the contribution of feedback within the framework of form-focused instruction to cover written correction and attempted to demonstrate that it can aid learning in general language classrooms (e.g. Bitchener et al. 2005; Sheen 2007b; Ellis et al. 2008). Although there are many intersections and overlaps between these two lines of inquiry, they also differ in important respects, which Ferris (2010, p. 186) describes in the following way:

> The L2 writing studies tend to be set within writing classrooms; there may or may not be a control group or a pretest–posttest design; some studies do not define or delimit which types of student writing errors received written CF; and there is variation as to how written CF is provided (sometimes in very precise ways and in other cases not specified) and by whom (sometimes the teacher and sometimes the researcher). In contrast, the SLA studies are conducted under far more controlled experimental conditions, with a control and one or more treatment groups, pretest-posttest-delayed posttest designs, a focus on a few carefully chosen and defined error types, and feedback provided systematically by the researcher(s) or the teacher(s) in some classroom studies.

The aim of the present section is to offer a succinct overview of the research endeavors that are representative of the two strands, first with respect to the design of typical studies carried out within each, and then in relation to the value of different types of written feedback, the variables that impinge on their effectiveness, and the nature of learners' engagement with teachers' comments, explanations and modifications. What should be emphasized at this point is that, as was the case with the discussion of research on oral error correction, the overview is not meant to provide an exhaustive account of all the relevant studies but, rather, highlight the most significant avenues that have been explored by researchers, and present the results of the most important empirical investigations representative of each area. A direct corollary of this stance is that the synthesis focuses in the main on research projects which have examined the contributions of corrective feedback on learners' inaccurate use of the TL in the written, or computer-mediated, mode some time after the texts are composed rather than of such that takes place in writing conferences, which, as was clarified in Sect. 3.5.4.2 of Chap. 3, can be viewed as indistinguishable from oral error correction. Such a decision also entails excluding studies which have principally examined peer feedback within the process approach to teaching writing, the contribution of students' self-evaluation without teacher feedback, the role of computer conferencing, or the application of corpora in writing instruction. While references to this kind of research can occasionally be made for the sake of illustration, it is not related to the provision of written feedback in the sense of responding to errors in the use of the language system and it is thus not germane to the present discussion.

4.4.1 Issues in Research Methodology

The methodology of research into written error correction has undergone an evolution that is reminiscent in many respects of the transformation that has affected

empirical investigations of the effects of oral feedback. This is because, also in this case, a gradual change of emphasis can be seen from examining learners' ability to introduce modifications into their original pieces of writing in response to corrections or suggestions made by the teacher on a variety of features, both linguistic, content-related and organizational in nature, to exploring the impact of feedback, frequently limited to one or a clearly defined set of items (i.e. focused), on their ability to compose entirely new texts, also some time after the errors are indicated or treated. The former approach has been preferred by L2 writing researchers who seek to determine "(…) whether written CF helps student writers to improve the overall effectiveness of their texts and to develop as more successful writers" (Ferris 2010, p. 188), and it is similar in many respects to descriptive research into oral correction, which is predicated on the premise that the utility of feedback moves can be evaluated in terms of whether or not they trigger uptake and repair. By contrast, the latter has been favored by SLA researchers who set out to "(…) examine whether written CF facilitates long-term acquisition of particular linguistic features, and, if so, how. (…) [as well as] how many features (and which ones) should be examined in one treatment or study, whether the feedback should be implicit or explicit, and, if explicit, how much metalinguistic explanation is necessary" (Ferris 2010, p. 188).[44] These efforts resemble and are in fact motivated by classroom-based, quasi-experimental research projects as well as laboratory-based, experimental studies into the effectiveness of different types of oral correction, such as those implicated in the explicit and implicit corrective techniques, on the one hand, and input-providing and output-pushing feedback strategies, on the other. Another similarity pertains to the fact that such studies have become increasingly complex, both in terms of their design and reliance on more advanced statistical procedures, and their preoccupation with the impact of mediating variables and the role of learner engagement. The present section aims to illuminate such methodological considerations by outlining the design of typical revision studies, research projects exploring the contribution of various types of CF to the composition of new texts, and empirical investigations seeking to look into the effect of teacher reformulations, as well as illustrating how the impact of individual factors and learner response can be explored.

4.4.1.1 Revision Studies

According to Ferris (2010), a prototypical revision study involves students *writing a paper*, *receiving corrective feedback* in one form or another on their piece

[44] It should be stressed one more time that the present author fully concurs with Sheen (2010c) and Sheen and Ellis (2011), who make the point that written corrective feedback can only be explicit. What Ferris (2010) seems to have in mind in this quote in fact is the distinction between direct and indirect feedback, which could, in everyday parlance, be viewed as differing with reference to the degree of their explicitness.

of writing, and then *being requested to revise and edit* their work on the basis of the expert feedback received, with their success in introducing the necessary adjustments constituting evidence of progress in the mastery of writing skills. A representative study was conducted by Ferris and Roberts (2001), who set out to explore the relationship between the explicitness of written correction and the ability to self-edit their texts displayed by 72 university-level learners of English as a second language. The students in three intact classes were asked to write an essay in response to a reading task and assigned to three conditions depending on the presence and type of the CF they received: (1) no feedback, in which case students had their essays returned to them with no marking of their errors, (2) the use of a code, where errors falling into five categories (verb tense or form, noun ending, the use of articles, word choice and sentence structure) were underlined and marked by means of symbols, and (3) mere indication of the problem, in which case the inaccurate forms were underlined but no coding scheme was applied.

The papers were returned to the subjects in the three groups after 2 weeks, and they were given 20 min to self-edit their essays, with the initial and revised versions being subsequently subjected to quantitative analysis which involved *tabulating the revisions* that were correct and incorrect or contained no change of the initial version, *obtaining word counts* by means of text-editing software, and *determining normalized error scores* (cf. Biber et al. 1998). Additionally, the students completed a *grammar knowledge pretest* consisting of an error identification, error labeling and error correction task, taking as a point of reference the five categories of errors investigated in the study. The analysis of the data entailed calculating *descriptive statistics*, such as frequencies, percentages and standard deviations, establishing the statistical significance of within-group and between-group differences with the aid of analyses of variance and *t*-tests, and arriving at correlation coefficients with the purpose of determining the relationships between the pretest scores and the subjects' performance in self-editing their texts. As will be recalled from the discussion of empirical evidence for the value of error correction in Sects. 2.3 and 2.4 in Chap. 2, the main weakness of such research is that it fails to provide evidence for the mastery of the targeted features over time and, as such, it has been criticized by specialists such as Truscott (1996, 2007), Sheen (2007b) and Ellis et al. (2008).

4.4.1.2 Experimental Studies

When it comes to research exploring the long-term effects of different types of written error correction on the acquisition of specific linguistic features, it adheres to the *experimental paradigm* and although it can use both intact and randomly created groups of students, there is an emphasis on including a *control group*, tracing changes in the participants' ability from the *pretest* to *immediate* and *delayed posttests*, and gauging their ability to apply the particular items in *new contexts*. A good example of a research project representing this approach is the longitudinal

study undertaken by Bitchener and Knoch (2009), which investigated the utility of differential responses to 52 intermediate ESL learners' errors in two functional uses of the English indefinite and definite article (i.e. first and subsequent mention) over the period of 10 months. The subjects were asked to perform five writing assignments consisting in describing pictures of social gatherings (i.e. a beach, picnic, campsite, family celebration, and sporting event), which elicited frequent use of the instructional targets and served as a pretest, with the descriptions made on this occasion being used in the course of the treatment, and four posttests administered immediately after the corrected essays were returned, 2, 6 and 10 months later.

While the control group received no feedback on their inaccurate use of articles, in the three experimental groups errors were responded to in the following ways: (1) direct correction in the form of ticks or checks over the correct uses of articles, replacing one article with the other when they were incorrectly used, or inserting articles in cases where they were omitted, (2) direct correction as in (1) aided by written metalinguistic explanation on the use of definite and indefinite articles in the form of rules of thumb and examples, and (3) direct correction and comments as in (2) coupled with oral metalinguistic explanation in the form of a 30-min mini-lesson focusing on the use of the targeted features. The learners' written descriptions were subjected to *obligatory context analysis*, which involved identifying the contexts in which articles were necessary, correcting all the errors in their application, and *calculating accuracy percentages*, with the statistical significance of the differences within and between the groups being established by means of analysis of variance and Tukey's posthoc tests. As Bitchener and Knoch (2009, p. 208) comment, "[t]he contribution that this study makes to the existing literature is its demonstration of the role that WCF can have on the long-term acquisition of certain linguistic forms/features. (…) No study that we are aware of has sought to investigate its effect over such an extensive period of time". However, they also highlight the limitations which include the relatively small sample size, the difficulty in teasing apart the effect of feedback variables (i.e. correction and the presence of explanations), reliance on a single writing task on consecutive tests, as well as the problems involved in transposing the error correction practices used to real classrooms.

4.4.1.3 Reformulation Studies

Yet another approach to investigating the effects of written error correction is embodied in the so-called *reformulation studies*, which in fact represent a broader line of inquiry in the field of form-focused instruction seeking to determine the contribution of *text-reconstruction activities* in teaching target language forms (see Pawlak 2011a, for a review). In such studies, *learners are first asked to write a text* individually or in pairs, often on the basis of a picture prompt, the pieces of writing are then *revised by a proficient language user*, a native speaker or not, whose task is to improve on them in such a way that they are reflective of the norms of

the target language but at the same time preserve the original ideas expressed by the authors (cf. Cohen 1989). The reformulations can be made not only in relation to the use of formal aspects of language but also such issues as appropriacy, style or organization (cf. Allwright et al. 1988), and they provide a stimulus for the *discussion of the changes* introduced and *subsequent learner revisions* of their first drafts. A good illustration of the methodological issues involved in this kind of research is the study conducted by Sachs and Polio (2007), the main aim of which was to compare the effectiveness of error correction and reformulation on learners' ability to revise their texts.[45] The 15 subjects enrolled in a high-intermediate English as a second language class at an American university took part three times over the period of 3 weeks in a sequence of composition, comparison and revision spread over 3 days. On each occasion, they were given 30 min to compose picture-based stories, which were collected and coded for the occurrence of different types of errors with the assistance of a 40-category classification system adapted from Kroll (1990) and Polio (1997), with efforts being made to ensure the required level of interrater agreement (83.1 %).

The errors that were coded and agreed upon, which concerned grammar, lexis, style and cohesion, were addressed in a different way in each of the three sequences: (1) by means of direct correction in purple ink made on the photocopies of the learners' papers, (2) through reformulations of the problem areas included in a new typed version of the text, and (3) the same procedure as in (2) coupled with *think-aloud protocols* conducted during the comparison stage. The students in all three conditions were provided with the initial stories as well as the corrected or reformulated texts, and given 15 min to acquaint themselves with the changes made, which was followed on the next day with a 20-min revision without access to the improved versions. The errors made at this stage were also coded and tallied with respect to their number and type, and then each T-unit (i.e. an independent clause plus all its dependent clauses) in the participants' revisions was coded for *adjustments in linguistic accuracy* (i.e. partially changed, completely corrected, completely unchanged and non-applicable), whereas the data collected by means of the verbal reports were coded for *instances of noticing and correction* as well as the *level of awareness* in terms of its depth (e.g. oversight, reason, rejection of change). Comparisons of the original and revised versions involved tabulating the percentages of T-units that manifested changes in accuracy and conducting a Friedman test and a Wilcoxon signed ranks test, while the analysis of the think-aloud data consisted of calculating cases of noticing and correction as well as the different categories of awareness. Since the results of this study will be discussed later in this chapter, suffice it to say at this point that Sachs and Polio (2007) mention among the main challenges of this type of research the time factor, since thinking aloud took longer than the other

[45] On account of the fact that the study had several foci, it also serves as an illustration of how learner engagement with written corrective feedback can be investigated.

conditions, the lack of long-term outcome measures, and the inherent weakness of the online estimates of attention used.

4.4.1.4 Research into Mediating Variables

There is just a handful of empirical investigations that have specifically addressed the impact of *mediating variables* on the effectiveness of written correction, and Sheen's (2007b) study of the interfaces between corrective feedback and language aptitude in the acquisition of English articles is a representative example of this line of inquiry. The participants were 91 intermediate-level ESL learners representing a variety of linguistic and ethnic backgrounds, and attending six intact classes. They were divided into three groups, one of which acted as a control group and did not take part in the treatment, while the other two participated in two instructional sessions, 1 week apart, during which they were required to rewrite a story eliciting a preset number of definite and indefinite articles.[46] The narratives were collected, and the inaccurate uses of the targeted features were dealt with in two distinct ways: (1) by marking the error and providing the correct version above it, and (2) by assigning a number to each error in the text and providing metalinguistic information about the erroneous usage alongside the correct form. The corrected texts were returned to the students 2–4 days later and they were invited to look over the modifications and comments carefully for about 5 min, but they did not receive any further explanations and they were not asked to revise the narratives.

The mastery of articles was measured by means of pretests, immediate and delayed posttests about a month later. In each case, the outcome measures included a speeded dictation test, on which progress was determined by calculating target language use (TLU) scores (Pica 1991), a writing test, also assessed in terms of TLU with the help of additional, more specific guidelines, and an error correction test adapted from Muranoi (2000) and Liu and Gleason (2002), the score on which was calculated as the accuracy percentage of the predetermined obligatory contexts it included. 2 weeks before the treatment the subjects also took a language analytic ability test devised by Schmitt et al. (2003), consisting of 14 multiple-choice items and based on an artificial language. The data were analyzed quantitatively by means of one-way ANOVA with Tukey's multiple comparisons posthoc tests, repeated measures ANOVAs and ANCOVAs, and Pearson product moment correlation. Although Sheen (2007b) is confident that the study is a successful response to Truscott's (1996, 2004) call for methodologically sound research, the researcher is cognizant of its limitations connected with the fact that

[46] In fact, the procedure involved the learners not only reading the story before being asked to rewrite it but also the teacher reading it aloud so that the students could jot down the key words, which makes the activity similar to the dictogloss, a text-reconstruction task frequently employed by researchers in the area of form-focused instruction (e.g. Swain 1998).

it was not conducted in writing classes, the treatment was of short duration, and only a fraction of the possible functions of articles was explored.

4.4.1.5 Research into Learner Engagement

In view of the fact that the methodology underlying empirical investigations of learners' cognitive response to written feedback was to some extent illustrated in the discussion of the study by Sachs and Polio (2007), it appears warranted at this point to describe the research project carried out by Storch and Wigglesworth (2010), which, to the best knowledge of the author, is the only attempt to date to examine learners' affective response to error correction. The study sought to compare the effects of direct and indirect written CF, but at the same time adopted the framework of Sociolinguistic Theory (Lantolf and Thorne 2006; Lantolf 2007) to explore the interactions between learning outcomes, the nature of engagement with correction, and learners' underlying beliefs and goals, thereby forging a crucial link between products, processes and learner-related factors. The researchers focused on selected cases from a larger-scale empirical investigation (Storch and Wigglesworth 2006) in which the performance of two groups of ESL learners, each composed of 12 pairs, was compared in relation to whether they received feedback by means of reformulation (i.e. equated here with direct correction) or the application of editing symbols (i.e. indirect correction). The pairs took part in three sessions during which: (1) they wrote a data commentary text in response to a chart, with their 30-min interactions being audio-recorded (day 1), (2) they were allowed 15 min to discuss the reformulations and symbols, and given another 30 min to rewrite the original version without access to the corrections, with their interactions being audio-taped to provide insight into the processing of corrective feedback (day 5), and (3) they individually composed a text on the basis of the same visual prompt (day 28).

The analysis was confined to four pairs and focused on three texts the learners produced (i.e. initial, revised, individual), the feedback provided and the transcripts of their interactions as they were reflecting on the modifications or symbols, and making the revisions. Following the procedure applied by Aljaafreh and Lantolf (1994) or Nassaji and Swain (2000), the researchers analyzed the texts generated in the three sessions microgenetically searching for *evidence of uptake and retention* whereas the transcripts were coded for the occurrence of *language-related episodes*, known as LREs, (i.e. segments of interaction featuring an explicit focus on linguistic items), with a further distinction between those manifesting *extensive* and *limited learner engagement* (cf. Tocalli-Beller and Swain 2005; Storch 2008).[47] Quantitative data were subsequently taken as a point of

[47] Language-related episodes are to a large extent identical to focus-on-form episodes defined in note 3 earlier in this chapter, but the former rather than the latter tend to be used when analyzing interactions between learners that take place in pairs or small groups.

departure for qualitative analysis which took into account the *characteristics of the students* in each of the four pairs and carefully examined the *patterns of interaction* in order to illuminate the relationship between linguistic and affective variables, on the one hand, and the incidence of uptake and subsequent retention, on the other. Storch and Wigglesworth (2010) underscore the novelty of their undertaking which is a rare attempt to shed light on the complex and dynamic interplay of the effects of written corrective feedback and learners' engagement, defined in relation to their affective response. They warn, however, that the findings "(….) should be interpreted cautiously" (2010, p. 328), because the subjects were advanced learners, different corrective techniques are likely to trigger different responses, and the study was not conducted in a real classroom, which made it impossible to investigate the impact of group dynamics and in particular the relationship between learners and their teacher (cf. Given and Schallert 2008).

4.4.1.6 Evaluation and Recommendations

Many of the comments that have been offered in Sect. 4.3.1.6 with respect to the methodological issues involved in research on oral error correction apply in equal measure to empirical investigations of written corrective feedback, with the important caveat that some of the challenges are even more acute here, mainly because properly designed studies seeking to provide answers to the most interesting questions are much more difficult to come across. On the one hand, undeniable advances have been made, which is visible in the shift from revision studies to quasi-experimental and experimental studies exploring the long-term effects of different types of written correction on the acquisition of specific linguistic features, a development that is in line with the trends that have been evident for a while in research on oral error correction. On the other hand, however, there is a need to involve larger numbers of participants, extend the duration of the treatments, isolate the effects of separate feedback variables, and devise more innovative ways of examining the impact of individual, linguistic and contextual factors as well as the nature of learner engagement. It is also advisable to place greater emphasis on exploring the longitudinal contributions of instructional treatments, trace learners' progress through developmental stages, and include outcome measures that would tap both explicit and implicit knowledge, although this last requirement is of less significance here in view of the fact that this book is predicated on the assumption that written correction primarily results in the development of declarative, rule-based knowledge and facilitation of control over such knowledge. Admittedly, there is also a place for *process–product studies* that would link what transpires in language lessons, individual learners' interactions with feedback or collaborative discussions of the possible revisions, and the impact of different corrective techniques. Particularly useful in explorations of the *dynamic effects of written feedback* on individual learners or groups of learners seems to be the sociolinguistic framework which has been employed, for example, by Aljaafreh and Lantolf (1994), Nassaji and Swain (2000) or Storch and

Wigglesworth (2010), and which can profitably be harnessed in the analysis of the data gleaned in the process component of experimental studies.

Of particular interest is also the proposal advanced by Ferris (2010), according to which L2 writing and SLA research should be regarded as complimentary and their designs should be combined to provide more valuable insights into the contribution of written correction. As can be seen from Fig. 4.2, this would involve investigating the contributions of different written feedback options, first, on learners' ability to revise their initial texts and, second, the impact of such correction and revision on the composition of entirely new pieces of writing. Ferris (2010, p. 194) writes that "(…) analysis of response, revision and subsequent texts could be roughly compared to an experimental pretest–posttest-delayed posttest design that would thus be both contextualized and longitudinal". In addition, the revision component could play a similar role to learners' immediate uptake and repair following the provision of oral CF, which has been correlated with longer-term learning by some researchers (e.g. Loewen 2005; Nassaji 2009), but its role could be even more beneficial in view of the fact that, in the case of writing, students have more time to reflect on and process the corrections, or to introduce the necessary modifications. Of course, the application of such *blended research designs* would also allow researchers to gain a more nuanced and multi-faceted perspective on the

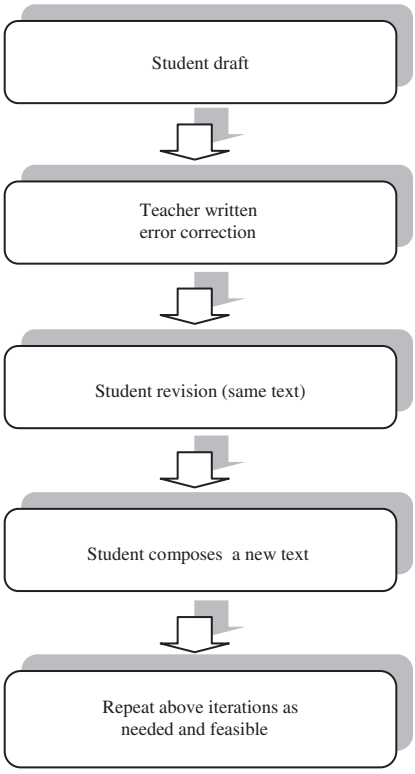

Fig. 4.2 A possible combination of L2 writing and SLA research designs in empirical investigations of written corrective feedback (adapted from Ferris 2010, p. 195)

effects of different techniques of written error correction, to establish the value of focused or somewhat unfocused feedback on various types of errors, and to consider the influence of individual and contextual variables. As Ferris (2010, p. 197) so aptly points out:

> (…) researchers should build upon the insights of the effective base of SLA studies—with its built-in longitudinal components, careful definition of relevant linguistic structures, and precise descriptions of how written CF is provided—but by posing questions and adapting research designs in ways that address the concerns of both SLA and L2 writing scholars, practitioners and students. In this way, a body of research work rigorous enough to be convincing to SLA researchers but practical enough to be useful to L2 writing specialists can be developed over time.

4.4.2 The Effectiveness of Different Types of Written Corrective Feedback

Since the empirical evidence for the overall efficacy of written error correction was reviewed in Sect. 2.4.2 in Chap. 2, the present discussion is restricted to the presentation of the findings of studies which had as their main goal determining the value of different techniques of responding to learners' inaccurate use of the target language system in the written mode, particularly such that have explored the feedback provided by the teacher. In other words, as was the case with the parallel section dealing with oral corrective feedback (Sect. 4.3.2), the focus here will be on the *how* of written correction, which, obviously, does mean that other issues, such as those concerning the source of feedback, will not be referred to at least in passing. Following the order of presentation adopted for the purpose of the previous section, the outcomes of revision studies will first be outlined, and, subsequently, the emphasis will be shifted to the discussion of the findings of gradually more properly designed experimental research attempting to gauge the effectiveness of direct and indirect feedback or more specific variants of the two, as well as empirical investigations striving to evaluate the contribution of reformulations (see Table 4.6. for a list of studies falling into these categories). It

Table 4.6 Studies investigating the value of different types of written error correction

Revision studies	Experimental studies	Reformulation studies
Robb et al. (1986)	Landale (1982)	Qi and Lapkin (2001)
Ferris and Roberts (2001)	Semke (1984)	Lapkin et al. (2002)
Chandler (2003)	Frantzen (1995)	Swain and Lapkin (2002)
Ferris (2006)	Bitchener et al. (2005)	Sachs and Polio (2007)
Vyatkina (2010)	Sheen (2007b)	Watanabe and Swain (2007)
	Bitchener (2008)	Brooks and Swain (2009)
	Bitchener and Knoch (2008, 2009, 2010)	Storch and Wigglesworth (2010)

should also be underlined that in contrast to research endeavors aiming to establish the value of different types of oral CF, the studies reported below are grounded in much more varied theoretical frameworks, which is the outcome of the cross-disciplinary nature of research on written error correction that extends far beyond the psycholinguistic or sociolinguistic approaches to the study of second language acquisition.

4.4.2.1 Findings of Revision Studies

Revision studies that have examined the efficacy of different types of error correction targeting a broad spectrum of errors in learners' writing, or such in which the intervention was unfocused, include those undertaken by Robb et al. (1986), Ferris and Roberts (2001), Chandler (2003), Ferris (2006), and Vyatkina (2010), not all of which incorporated a true control group. In the first of these, 134 Japanese learners of English as a foreign language were provided with four types of feedback on their essays over the period of one academic year as follows: (1) direct correction, (2) indirect correction in the form of in-text coding, (3) indirect feedback in the form of highlighting, and (4) marginal comments on the total number of errors per line. The analysis of five essays using what the researchers describe as measures of accuracy, fluency and complexity produced no significant differences between the four conditions, which led them to conclude that "(…) less time-consuming methods of directing student attention to surface errors may suffice" (Robb et al. 1986, p. 164). Ferris and Roberts (2001), in turn, conducted a study, the design of which was described in the previous section, and found that although the students who had the benefit of indirect correction outperformed their control counterparts, there were no significant differences in the effects of codes and underlining.

Chandler (2003) reported the findings of two research projects which involved students enrolled in an ESL reading and writing course and spanned almost the whole semester. One of them involved two groups and sought to compare the effectiveness of correction in the form of coding, accompanied by subsequent rewriting of the initial essays, with uncoded correction without revision, and showed that the former was more effective than the latter, as evident in the significantly lower error rate. In the other, students in a single group had inaccuracies in their four consecutive essays corrected either directly or indirectly by means of underlining, description of the problem (i.e. the use of a code), and underlining combined with description. The analyses of the students' revisions with respect to measures of accuracy, fluency and quality (i.e. the number of errors, holistic assessment, the time spent composing, immediate student responses to feedback, and the time invested by the teacher) demonstrated that direct correction was more beneficial than indirect correction, and, in the case of the latter, underlining proved to be the most effective corrective feedback technique. In the next study, Ferris (2006) investigated the effects of written feedback in response to the writing of 92 ESL undergraduate students in terms of short-term and long-term improvement,

and found that direct and indirect options were equally effective but interacted with error type, a point that will be taken up in the Sect. 4.4.3. Finally, Vyatkina (2010) examined the impact of electronically delivered CF on the improvement of writing accuracy of 66 beginner-level learners of German who received direct (i.e. the inaccuracies were underlined and the correct form was given in parentheses), coded (i.e. the errors were underlined and indicated by means of color coding) and uncoded (i.e. only underlining was used) correction. She failed to observe significant differences in the effects of different types of feedback, although direct correction did lead to somewhat higher correction rates for some categories of errors.

4.4.2.2 Findings of Experimental Studies

As regards research that has appraised the effects of written error correction extending beyond subsequent revisions of the same texts, it is perhaps fitting to begin the overview with a brief look at early studies which were intended as controlled experiments but suffered from a number of flaws in their design, such as those conducted by Landale (1982), Semke (1984), and Frantzen (1995).[48] Landale (1982) compared the contributions of direct correction, which involved the provision of the correct form, and indirect correction, in which case errors were indicated by means of a code, error awareness sheets were filled out and the pieces of writing were subsequently revised, to the accuracy of the essays written by 60 intermediate learners of German at a US university over the period of one quarter. The analysis of the summaries composed by the students as pretests and posttests revealed that only the subjects who had to work out the problems on their own succeeded in reducing the incidence of grammatical and orthographic errors, also outperforming the subjects in the direct condition on 11 out of 12 non-lexical error categories. The participants of the study conducted by Semke (1984) were 141 first-year students of German at a US university who were requested to compose weekly free writing assignments throughout a 10-week course. They were divided into four groups receiving the following treatments: (1) comments and questions in response to content of the texts, (2) direct feedback inserted in the pieces of writing, (3) direct correction coupled with comments on content, and (4) a coding scheme and subsequent revisions. Performance was measured by means of a pretest and a posttest in the form of a timed, free writing sample and a cloze test, which enabled the researcher to tap into such areas of competence as accuracy, fluency and proficiency. No significant differences between the four conditions were reported, but since the groups receiving only comments showed the most progress, she concluded that the results "(…) support the theory that correction does *not* improve students' writing skills in German as a second language, nor

[48] These weaknesses are most often related to the lack of a true control group, the failure to control for all the extraneous variables, the nature of the outcome measures and assessment procedures, and the presence of only one posttest, which precludes the researchers from advancing claims about the long-term contributions of different types of treatment.

does it increase total competency in the language" (1984, p. 2000) (emphasis original). In the last study in this category, Frantzen (1995) investigated the effects of direct and indirect written correction on the writing of 67 intermediate learners of Spanish in the United States over 15 weeks. In this case, direct correction supplemented with comments and review lessons turned out to be more efficacious than indirect feedback in the form of circling or underlining the incorrect words on a discrete-point grammar test, but not on an integrative test consisting of an in-class essay.

Particularly valuable are insights offered by more recent experimental studies that have been much more carefully designed and often attempted to investigate not only the efficacy of direct and indirect written corrective feedback, but also more specific options included in each of the two broad categories. Another consequential difference from the earlier research is that such empirical investigations have examined the effects of focused correction, or such that is limited to one linguistic feature or at most just a few instructional targets, which facilitates the process of designing outcome measures providing evidence of acquisition. One such study was conducted by Bitchener et al. (2005), who examined the accuracy of the written performance of 53 post-intermediate ESL learners of English as a second language in relation to the use of prepositions, the past simple tense, and the definite article, as these areas had been identified as the most problematic. Over the period of 12 weeks the participants completed four 250-word writing tasks which involved composing an informal letter and were divided into three groups depending on the feedback they received: (1) direct feedback, with the correct version being provided above the underlined error, (2) direct feedback as in (1) supplemented with a 5-min teacher-student conference, and (3) feedback was provided only on content and organization. The analysis of the accuracy percentages on the new texts revealed that the combination of direct feedback and one-on-one conferencing was the most beneficial, with the caveat that this effect was only significant for the past tense and articles but not for prepositions. The research project conducted by Sheen (2007b), outlined in the section devoted to methodological issues, also focused upon the contributions of two types of direct correction which differed in relation to whether the provision of the correct form in the use of English articles was aided by metalinguistic information. Although both groups outperformed the control group on immediate posttests, the direct metacognitive group was superior on delayed posttests, a result that interacted with the subjects' language aptitude (see below).

The use of the English article system, or, more precisely, referential indefinite 'a' and referential definite 'the', was also targeted in a series of empirical investigations carried out by Bitchener (2008), and Bitchener and Knoch (2008, 2009, 2010), most of which followed a very similar design, described in Sect. 4.4.1.2, on the basis of Bitchener and Knoch's (2009) study, only differing in the number and characteristics of the subjects as well as their specific foci. Bitchener (2008) provided evidence that the presence of feedback aided 75 low intermediate learners improve their accuracy in the use of the instructional targets, both right after the treatment and 2 months later, and that direct correction on its own or coupled with

oral and written metalinguistic explanations was the most efficacious. Bitchener and Knoch (2008) reported almost identical findings for a group of 144 international and migrant ESL learners in New Zealand, the only exception lying in the fact that the differences between the three treatment conditions failed to reach significance. These results were later corroborated by Bitchener and Knoch (2009) in the case of 52 students drawn from the same population as in the previous two research projects. In their most recent empirical investigation, Bitchener and Knoch (2010) compared the changes in the mastery of articles by 63 advanced learners of English at a US university as a function of the feedback provided on errors in their pieces of writing over the period of 10 weeks. The students were divided into the control group and three experimental groups which received: (1) direct correction plus a metalinguistic explanation, (2) indirect feedback in the form of circling, and (3) metalinguistic explanations accompanied by a form-focused review of this explanation.[49] The analysis of the subjects' three pieces of writing, which served as the pretest, immediate and delayed posttests, showed that although the feedback conditions were equally effective in the short-term, it was the students who had the benefit of metalinguistic explanations (i.e. 1 and 3) that retained the accuracy gains over time.

4.4.2.3 Findings of Reformulation Studies

The last category of studies into written corrective feedback are reformulation studies that have been conducted, for example, by Qi and Lapkin (2001), Lapkin et al. (2002), Swain and Lapkin (2002), Sachs and Polio (2007), Watanabe and Swain (2007), Brooks and Swain (2009), and Storch and Wigglesworth (2010). All of these research projects have relied on the three-stage procedure characterized in Sect. 4.4.1.3 (composing–comparison–revision), sometimes with minor modifications, divergences in terminology or the application of other introspective tools. They have primarily focused on the interactions between learners as they were discussing the revisions or composing, and many of them have adopted a sociolinguistic position viewing such interactions as manifestations of *collaborative dialogue* (cf. Swain 2000) or *languaging* (cf. Swain 2006).[50] Qi and Lapkin (2001) found that their two Mandarin-speaking learners of English as a second language were able to improve the quality of their picture-based narratives, while Lapkin et al. (2002) reported more accurate use of French pronominal verbs by 8 Canadian immersion students in revised stories, following pair discussions of the revisions of the initial versions and stimulated recall interviews. Two Canadian

[49] According to the classification introduced in Sect. 3.5.4.2 in Chapter 3, (3) is also an example of indirect feedback since the correct version is not provided by the teacher. Bitchener and Knoch (2010), however, view it as a form of direct feedback.

[50] In most of these studies, the main emphasis is laid on the quality of learners' noticing of the changes made to their initial texts. Since noticing is reflective of learner response to feedback, the discussion here is only confined to the impact of reformulation on subsequent revisions.

immersion students were also the participants of the study carried out by Swain and Lapkin (2002), who demonstrated that reformulations and opportunities for collaborative dialogue translated into considerable improvement, as the use of the targeted items (i.e. pronominal verbs) was correct in 78 %, a finding that, in the words of the scholars, "(…) attests to the power of the multi-stage writing, noticing and stimulated recall processes" (2002, p. 291). Similar results have been reported by Watanabe and Swain (2007), who related the occurrence of LREs, noticing and subsequent learning to the collaborative orientation of pair interactions of 12 Japanese learners of English, as well as Brooks and Swain (Brooks 2009), who explored improvement on a picture-based collaborative writing task performed by four adult ESL learners as a function of the source of expertise, and uncovered that successful solutions to language problems in interactions with peers resulted in the highest gains in accuracy in the posttest performance. Finally, the studies carried out by Sachs and Polio (2007), and Storch and Wigglesworth (2010), the design of which was presented in the previous section, showed that written error correction, whether direct or indirect, results in more accurate revisions than reformulations, which, however, also lead to considerable improvement.

4.4.2.4 Reflections

The conclusion that can be drawn from the foregoing review of the findings of revision, experimental and reformulation studies of different types of written corrective feedback seems to be that, similarly to oral error correction, such pedagogic intervention is the most effective when it is confined to a particular category of errors and learners are provided with the correct form and/or a straightforward indication of the nature of the problem, such as a metalinguistic explanation. A similar assessment is offered by Sheen (2010a, p. 172), who points out that "(…) focused error correction leads to gains in linguistic accuracy and (…) the more explicit the feedback, the greater the benefit for the students". It should also be stressed that within the direct and indirect feedback types it is typically the more detailed and informative options, particularly those that are coupled with explicit comments, the pertinent rule and appropriate examples, that are likely to result in greater mastery of the targeted features. Although there is some empirical evidence to the contrary, it mostly comes from earlier empirical investigations that are afflicted by serious methodological flaws, appraise the effects of unfocused feedback, only examine revisions made to the same texts, or fail to sufficiently control for the influence of intervening variables (e.g. Landale 1982; Semke 1984; Robb et al. 1986; Ferris and Roberts 2001). As regards the more recent research project conducted by Vyatkina (2010), it did not prove the superiority of any of the corrective techniques, a finding which may be ascribed to the electronic nature of the correction, but even here direct correction held a slight edge over indirect feedback, albeit not large enough to reach statistical significance.

On the other hand, it must be borne in mind that the available research findings are still fragmentary in the sense that the impact of written correction has only

been examined with respect to just a handful of linguistic features, there is a need to compare the efficacy of other corrective options or combinations thereof with various populations, more data need to be obtained on the impact of mediating factors, let alone the fact that there are sometimes major differences in research methodology between specific research projects. As Guénette (2007, p. 51) so aptly comments, "[t]he variables to consider include the following: proficiency level, correction/no-correction comparison, design (longitudinal versus cross-sectional), type of feedback provided and how it was provided, procedures, and elicitation tasks. (…) confounding variables make it difficult to isolate, inasmuch as this is possible, the effects of feedback from other factors such as classroom activities and whether or not students were graded on their writing". It is the aim of the following two subsections to shed light on the influence of factors that mediate the effects of different types of written feedback as well as on the nature of learner engagement with such negative evidence.

4.4.3 The Impact of Mediating Variables

If the body research on the moderating role of individual, linguistic and contextual factors in the case of oral error correction can be regarded as scarce (see Sect. 4.3.3), empirical evidence in this respect is almost non-existent when it comes to written corrective feedback. Moreover, most of the few studies that have provided so-much-needed insights in this area are not experimental in nature or suffer from a number of design flaws, with the consequence that extreme caution should be exercised when interpreting the results.

Two research projects that have supplied information about the impact of *learner-related variables* have been conducted by Goldstein (2006), who demonstrated through the analysis of the performance of two L2 writers that *motivation* is a critical factor determining the incorporation of teacher feedback, and Sheen (2007b), who provided evidence that the utility of correction may be a function of learners' *language aptitude*, particularly when the feedback contains metalinguistic comments. There is also some evidence for the mediating effects of students' *proficiency level*, with the caveat that it is only indirect since the available studies were not specifically designed to tap this variable. Ferris and Roberts (2001), for example, suggested that better performance on a pretest focusing upon the knowledge of grammar contributed to more successful self-editing by the participants, whereas the findings of some reformulation studies (e.g. Qi and Lapkin 2002; Lapkin et al. 2002; Watanabe and Swain 2007) show that learners' proficiency level might to some extent shape the focus, nature and outcomes of collaborative discussions of the differences between the original and reformulated versions of a text, thereby exerting an influence on the quality of subsequent revisions. There are also voices that lower proficiency students may be more likely to benefit from direct rather than indirect feedback, on account of the fact that they lack the requisite competence to sort out many of the problems on their own (Ferris and

Hedgcock 2005). Given such a paucity of research into the role of individual factors, there is obviously an urgent need to further explore the ways in which cognitive (e.g. aptitude, learning styles), affective (e.g. anxiety, self-concept) and social (e.g. gender, beliefs) variables impinge on the utility of various written feedback techniques.

There are also studies that have yielded some information about the mediating impact of *linguistic factors*, but, again, very few of them have incorporated these as separate variables into their designs, which surely precludes making definitive claims and only justifies talking about tentative patterns and trends. Some evidence in this areas, for example, comes from an early study by Landale (1982), already considered in the previous section, because it showed that the effects of direct and indirect written correction may depend on a particular category of errors. Researchers have also interpreted their results in terms of Ferris's (1999) distinction between *treatable* and *untreatable errors*, or such that occur in a patterned way and can be related to specific rules (e.g. subject-verb agreement, pronouns, articles, verb forms), and those that cannot easily be explained and their occurrence is more idiosyncretic (e.g. prepositions, word choice, sentence structure). Ferris and Roberts (2001), for example, found that learners were more successful in their revisions when dealing with errors that were treatable than those that were untreatable. They also observed, however, that there may exist different levels of difficulty within the two categories and discovered that the learners who had received no treatment were the most likely to correct inaccuracies in word choice, which testifies to the excessive simplicity and unreliability of Ferris's (1999) division. In another study, Bitchener et al. (2005) provided evidence that the combined feedback option (i.e. direct correction plus conferences), which proved to be the most effective, worked better for errors in the past tense and articles than for prepositions, the former being regarded as treatable and the latter as untreatable. Finally, Ferris (2006) provided evidence that direct correction might be more beneficial for untreatable errors while indirect feedback for treatable errors, which is, incidentally, the approach adopted by teachers. Also of relevance are empirical investigations that have examined the effectiveness of *focused* and *unfocused* written CF. Their findings are inconclusive, though, since Ellis et al. (2008) failed to observe a difference between the two approaches in the case of articles, whereas Sheen et al. (2009) provided evidence that selective feedback was more effective in increasing learners' accuracy in the use of this feature. Clearly, research into the interfaces between the inherent characteristics of the targeted forms and the value of different types of written correction has a long way to go before it can reach the depth and scope manifested by studies of oral feedback in this area, an aim that specialists should without doubt strive after.

The least is known about the mediating effects of *contextual variables*, whether they are viewed from the macro- or micro-perspective, with the outcome that only two relevant studies can be cited here. In the first, Bitchener and Knoch (2008) compared the utility of different corrective feedback options (see Sect. 4.4.2) with *international* and *migrant students* in New Zealand but failed to observe significant differences in this respect, the only exception being that the latter performed

slightly worse in the long run, a result that can attributed to the fact that they were a little older and less attuned to the need for accuracy. In the second, Given and Schallert (2008) demonstrated that the *rapport between teachers and students* may play a pivotal role when it comes to the actual use of written corrective feedback, because mutual trust translates into faithful employment of the suggestions made in revisions, thereby leading to greater improvement. Given the scarcity of empirical evidence in this area, further research is indispensible that would address, for example, such issues as the role of the educational context, the overall orientation of the instruction, the variable response to correction provided in different writing assignments, or various aspects of group dynamics.

4.4.4 The Nature of Learner Engagement

There is also little research in the area of learner engagement with written feedback, which is to some degree warranted by the fact that, in contrast to oral correction, learners are extremely unlikely to overlook the corrective function of an underlining, the presence of an alternative form above a word, or a metalinguistic comment on the margin. On the other hand, such an assumption may be shortsighted because learners' satisfactory response to correction is by no means guaranteed, particularly when it is expected to take place in the home, the depth of the processing might vary considerably, and learners might manifest different reactions to having their errors indicated or treated on an affective level. At first blush, one would be tempted to equate learners' *cognitive response* with their revisions of their original texts, such as those occurring in the studies conducted by Chandler (2003) or Ferris (2006), with the resulting modifications, which could of course be both successful and unsuccessful, being rough equivalents of immediate uptake and repair in response to oral error correction. However, the *distinction between the behavioral and cognitive response* might somewhat inevitably become blurred when learners are requested to discuss and reflect upon the direct or indirect feedback they receive on their writing or the reformulations of their initial texts, a task that is part and parcel of reformulation studies, such as those referred to in the previous section. In such situations, the occurrence, nature and outcome of a language-related episode can be viewed in terms of a behavioral response, in the sense that a particular issue is raised and dealt with in one way or another, as well as a cognitive response, since the ways in which learners interact and go about collaboratively solving the problem is indicative of the level of noticing and awareness of a specific linguistic feature and the rules that can be invoked in justification of the acceptance or rejection of a modification, or a suggestion of alternative solutions. Moreover, in such cases, the behavioral and cognitive response may in fact merge or at least interact with the *affective response* as well as individual and contextual factors, since the depth of processing is likely to vary depending on the attitudes to the interlocutors, personality and learning styles, or the conditions in which the reflection takes place.

As regards specific studies, Qi and Lapkin (2001), for instance, demonstrated with the assistance of think-aloud protocols that *substantive noticing*, in which the reasons for the decisions taken are articulated, is superior to *perfunctory noticing*, where no justification is provided, since it has a bearing on the quality of the revisions later made by learners. They comment that "(…) while promoting noticing in a reformulation task may be important, improving the quality of noticing may be even more important" (2001, p. 294). Such findings have been corroborated by the results of the research projects carried out by Sachs and Polio (2007), Brooks and Swain (2009), and Storch and Wigglesworth (2010), with the first of these, however, providing evidence that having students verbalize their thoughts may set off *reactivity* and in fact hamper performance. The cognitive response to written correction was addressed as well in the study carried out by Montgomery and Baker (2007), which compared learners' and teachers' perceptions of written CF on compositions with the actual corrections that the practitioners performed. Although there was much overlap between the two groups, one exception being that learners believed they received more feedback than their teachers' reported giving, there was much less coordination between such views and the real frequency, focus and scope of correction. As regards learners' affective response, insightful observations derive from the study carried out by Storch and Wigglesworth (2010), who provided convincing evidence that uptake and retention of CF as well as the ensuing improvement in writing skills are a function of learners' attitudes, beliefs and goals. Given how little research has been done in the domain of learner engagement with written error correction, whether understood in terms of the behavioral, cognitive or affective response, or some kind of combination of these, there is an urgent need for further studies that might, for example, relate this critical issue to the use of different corrective techniques under different circumstances.

4.5 Conclusion

The main objective of the present chapter was to provide an exhaustive but at the same time selective account of the most important findings of research into the effects of oral and written corrective feedback, particularly in relation to the efficacy of specific CF options in the two modes and the variables that are likely to affect this efficacy. With this goal in mind, at the very outset, a componential framework for investigating error correction was introduced, a model that was proposed by Ellis (2010b) and has been slightly modified for the purposes of the present work. The four elements included in the framework, that is oral and written error correction, the individual, linguistic and contextual factors performing as mediating variables, learners' engagement with corrective feedback, and learning outcomes, provided a point of reference for the subsequent discussion which focused on the findings of the relevant studies, separately for the treatment of learners' errors in the oral and written modality. In both cases, methodological

issues were first touched upon and the design of the representative research projects was illustrated, which was followed by the presentation of the empirical evidence in relation to different types of feedback, the contribution of moderating variables and the nature of learner engagement with the corrective information. It should also be emphasized one more time that the chapter was not intended as a complete summary of all the studies conducted in a specific area, but, rather, meant as a synthesis and analysis of the insights provided by the key lines of inquiry. Therefore, it has mainly focused on the choice of CF options, giving little weight to the timing or source of correction, it has not separately considered computer-mediated feedback, it has placed emphasis on oral corrective feedback provided in the course of fluency-oriented activities, and it has by and large excluded studies of written correction conducted within the framework of the process approach as well as those relying on the use of information and computer technology.

The picture that emerges from the foregoing discussion is extremely complex and far from clear on account of the fact that although some generalizations and recommendations are surely warranted, methodological problems abound and many important questions are still left unanswered, with the effect that there is a vital need for much more meticulously designed research. It is clear, for example, that oral and written error correction works in the short and long term, the former has an effect on the development of both explicit and implicit knowledge, and in the latter case it works best when it is focused, consistent and provided in the course of fluency-oriented activities over an extended period of time (cf. Pawlak 2010b). There is also strong evidence that both online (immediate) and offline (delayed) feedback can be beneficial, and more explicit and output-prompting feedback types in general work better than more implicit and input-providing ones, with the caveat that much depends on a specific context and various combinations of these are possible. In addition, there are grounds to believe that self-correction is most likely to result in the acquisition of the targeted features, correction works best when it is fine-tuned to learners' level, capacities and needs, different linguistic features may respond in different ways to different corrective techniques, learners need to be developmentally ready to benefit from reactive negative evidence, the impact of correction hinges upon a whole gamut of individual and contextual variables, and the ultimate benefits of feedback are to a large extent determined by the nature of learner engagement.

On the other hand, however, there are many crucial areas that are in need of empirical investigation, the most important of these being the intricate interplay between different types of feedback or clusters of such strategies, the learner-, language- and context-related factors, and the presence, depth and consequences of the behavioral, cognitive and affective response. Major improvements also have to be made with respect to research methodology, which is connected not only with reliance on meticulous research designs, appropriate treatments, data collection instruments and outcome measures, but also endeavors to combine the process and the product, the quantitative and the qualitative, as well as the psycholinguistic and the sociolinguistic. As Ellis and Sheen (2011, p. 607) so aptly point out,

"[c]orrective feedback constitutes an area where the discourses of theory and practice can comfortably rub shoulders. It affords an ideal area for researchers and teachers to engage in collaborative enquiry". An attempt to explore the implications stemming from the research findings discussed in this chapter for both of these parties will be made in the concluding part of the present work.

Conclusions, Implications, Future Directions

The present volume has provided an exhaustive account of the central issues involved in the provision of oral and written error correction in foreign language education with the purpose of reconsidering its contribution to second language development and evaluating the choices that teachers have at their disposal when responding to learners' inaccurate output against the backdrop of the relevant theoretical positions and the available empirical evidence. The main assumption underlying the considerations included in each of the four chapters of this book has been that corrective feedback constitutes an important option in form-focused instruction and, therefore, its target, timing, manner, and sources should be informed by and geared to the objectives of the activity in hand, a particular lesson, a sequence of such lessons and the entire curriculum, rather than be determined on the spur of the moment with little consideration to previous and future teaching. Building on this premise, an attempt has been made to illustrate the place that feedback options are accorded in the well-known taxonomies of techniques and procedures of teaching language forms, the rationale for error correction has been offered on theoretical, empirical and pedagogic grounds, its contributions to the development of implicit and explicit second language knowledge have been explored, the components of the decision-making process that teachers have to engage in when reacting to errors has been held to close scrutiny, and recent research findings have been thoroughly discussed. In consequence, the provision of corrective feedback has been situated precisely where it belongs, that is at the interface of theory, research and pedagogy, thereby demonstrating that this is an area where the three domains can be effectively reconciled and the concerns of scholars and practitioners can meet and be expediently addressed.

This monograph would surely be incomplete, were it not to offer concrete guidelines for teachers wishing to enhance their feedback practices, a task, however, that poses a formidable challenge in view of the fact that decisions made in this respect are exceedingly complex, they are to a large extent dependent on a particular context, and influenced by a range of variables that are often beyond the control of the teacher. Generally speaking, it should be reiterated at this point that despite the reservations voiced by Krashen (1982), Truscott (1996, 1999) and many others, there is copious empirical evidence that corrective feedback works,

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its positive effects extend way beyond immediate repetition of the correct form, self-repair in response to a prompt, or revision of a piece of writing on the basis of the markings, symbols or comments included by the teacher. This indicates that oral and written correction is a valuable pedagogic tool and, given its ubiquity in language education, attempts should be made to fully exploit its potential in fostering the development of communicative competence in the target language rather than make somewhat futile efforts to shy away from delivering it, a policy, it should be added, that is not only doomed to fail, but is also ineffective, imprudent and stands in stark contrast to the preferences manifested by the vast majority of learners. Obviously, this is not tantamount to suggesting that all inaccuracies in learners' spoken or written output should be targeted by corrective feedback under all circumstances in a random and unprincipled manner, as this would not only be unfeasible, but also unlikely to bring about the expected benefits, let alone the fact that it might do more harm than good, generating some of the problems that the detractors of correction caution against. In other words, the provision of corrective feedback should be informed by a set of concrete principles, one of the most crucial of which is that it should be aligned with current instructional objectives, such as teaching a particular linguistic feature or the proceduralization and automatization of a number of such features. An equally important guideline is that error correction during meaning and message conveyance should occur in such a way that, on the one hand, it will draw learners' attention to form-meaning mappings, but, on the other, it will not compromise the communicative nature of the activity, with the effect that the main focus should be maintained on what van Lier (1996) refers to as the participation orientation rather than the assessment orientation. Whatever the situation in which teachers choose to treat learners' errors, they should keep in mind the advice offered by Larsen-Freeman (2003) that such corrective reactions should be judicious, focused in the right way, involve the use of appropriate techniques, and communicated in a supportive as well as non-judgmental manner.

Moving on to more specific guidelines, a fundamental distinction should be made in the case of oral production between corrective feedback supplied in the course of accuracy-based and fluency-oriented activities, as it by and large determines both the envisaged contributions of such pedagogic intervention and the way in which it should occur. Since accuracy-based work usually takes the form of text-manipulation activities aiming to provide practice in the feature that has recently been taught, they are primarily intended to stimulate the development and proceduralization of explicit knowledge. Consequently, it would seem that in this case the correction should be squarely focused on the targeted structure, immediate, direct, and output-inducing in the sense that the teacher should first encourage the learner who has erred to solve the problem, perhaps also involve other students in the correction, and, should these strategies fail, provide the accurate form himself or herself. The situation is much more intricate when it comes to feedback in the course of fluency-oriented work, as implemented by means of text-creation activities or communicative tasks, because, in this case, not only the development of both explicit and implicit knowledge is at stake, but also the educational objectives might be quite disparate. For one thing, the goal could be to enable learners to use

a linguistic feature that has recently been explicitly taught in real-operating conditions, such as those present in spontaneous communication, or, to use more scientific language, to stimulate the development of implicit knowledge or, depending on theoretical allegiances, assist the automatization of explicit knowledge so it can be applied under time pressure. This can be achieved through the use of text-creation activities and focused-communication tasks (i.e. those requiring the use of the targeted feature), and, to all intents and purposes, corrective feedback in such situations should also be focused (i.e. directed at that specific linguistic feature), capitalizing on the fact that learners will have been primed to notice the structure, their attentional resources will be appropriately channeled, and this approach will therefore also ensure optimal relevance, no matter what corrective strategy is used. In such cases, it is perhaps best when the feedback comes from the teacher, as in this way it does not overly disrupt the flow of communication, it is immediate to allow learners to notice gaps and holes in their interlanguages, and it would be ideal if it could be provided intensively over the period of several classes, although it might be difficult for logistical reasons. In spite of the fact that research findings indicate that more explicit, output-inducing types of feedback, such as prompts, are more efficacious than those that are more implicit and input-providing, such as recasts, this issue is likely to be of lesser significance here because learners will be cognizant of the pedagogical focus of the activity. Although uptake and repair are always welcome, time constrains, the inherent characteristics of a specific feature or learners' individual profiles will determine the choice of the corrective strategy, with the caveat that variety should always be at a premium.

On the other hand, when communicative activities, or what is referred to as unfocused communication tasks (i.e. such that do not have a specific didactic focus), are employed for the sake of honing speaking skills as such rather than with the aim of fostering the mastery of a specific structure, the range of possibilities is much wider but at the same time the decision-making process becomes much more complex. This is because, in such situations, a variety of errors is likely to be committed, some of which will not even be noticed, and there will be a need to consider the instructional targets in terms of such factors as the importance attached to a particular target language subsystem, the learning challenge posed by a given item, learners' developmental readiness, the presence of prior instruction in a specific area, or the degree of intrusion into message communication, to name but a few. Equally important in this case will be decisions regarding the timing of correction since, while corrective feedback can as well be supplied immediately, there may be some justification for delaying it until later in the lesson or even deferring it until the following class where the most common inaccuracies can be the focus of a mini-lesson. When it is immediate, the choice of a feedback strategy also becomes a much more important issue because learners might not be able to interpret implicit recasts as negative evidence given the fact that they will not have had the benefit of prior instruction. This might indicate that greater preference should be given here to different types of prompts, although, as will be recalled from the discussion of the empirical evidence in Chap. 4, different language features might respond differently to different corrective moves, with the choices in

this respect being more conducive to system learning or item learning, as well as internalization of new knowledge or greater control over partially acquired structures. The source of correction is more relevant as well since, although immediate peer correction might be too embarrassing, lead to a loss of face and get in the way of communication, learners can be invited to correct each other's errors at a later time, often in collaboration with each other, and it may play an important role in the course of group work which can be regarded to some extent as a hallmark of unfocused communication. Finally, the error correction policy during communicative activities without a clear linguistic focus is much more likely to be a function of the different variables specified in the introductory part of Sect. 3.5 in Chap. 3, as the occurrence, scope and nature of CF is bound to be reflective of the more general beliefs and preferences on the part of the teacher, his or her disposition on a particular day, the level and characteristics of the learners, the character of the activity, as well as a number of other variables.

When it comes to written corrective feedback, the extent to which it should be provided as well as how this should be done also hinges upon the purposes and types of activities which learners are required to perform or, to be more precise, the writing assignments they complete. In fact, the approach to error treatment is likely to vary dramatically in classes devoted solely to the development of writing skills and such that pursue more general instructional goals, with most foreign language education undoubtedly falling into the latter category. Since the goal of separate writing courses, such as those taught in foreign languages departments, is to help learners become better writers who will be capable of composing interesting, eloquent, well-organized and accurate pieces of writing representative of a variety of genres, there is undoubtedly room for the use of both product and process approaches, with the effect that corrective feedback will focus on many other areas than just accurate use of grammatical, lexical, pragmalinguistic or orthographic features, and it may be provided by both the teacher and peers. By contrast, in a typical foreign language classroom, the amount of time allotted to writing is bound to be limited, which will also impinge upon the application of corrective strategies, with the decisions made being to a large extent determined by the goals of the writing assignment. When students are asked to write a text of one kind or another with the purpose of practicing a specific linguistic feature, be it a grammar structure or vocabulary related to some semantic field, the correction should perhaps focus on the instructional target, unless there are other errors that get in the way of communication. In most cases, it should be provided by the teacher, and, although this will depend on the context, it should perhaps also be explicated and supplemented with metalinguistic commentary. When writing skills as such are intended to be in focus, a much wider range of inaccuracies will have to be taken care of, with particular criteria being reflective of a multitude of individual, linguistic and contextual factors, it will be more reasonable to encourage peer feedback, and there will be more room to draw upon indirect options that will encourage students to seek out solutions on their own. Obviously, for written feedback to have the expected effect, learners must make the effort to examine it, which, as many teachers would undoubtedly concur, is often not the case. For this

reason, it might be necessary to allocate part of the lesson to the analysis of corrections or even, time permitting, hold occasional individual conferences with the students to draw their attention to the most persistent errors.

Obviously, all these guidelines, whether they apply to oral or written error correction, should only be viewed as tentative on account of the fact that, as was made plain throughout this book, the effectiveness of specific corrective reactions cannot be taken for granted as they are heavily context-dependent and should therefore be adjusted and shaped accordingly. It is clear, for instance, that individuals in the same learner group are bound to differ considerably with respect to a wide array of variables such as, among others, their overall proficiency level, strengths and weaknesses in relation to target language subsystems, analytic ability, working memory capacity, learning styles, motivation, anxiety, goals, beliefs and preferences, as well as various combinations of these factors. This, in turn, is bound to impact in highly complex and often unpredictable ways their engagement with corrective feedback, understood in terms of the behavioral, cognitive, and affective response, thereby impinging on learning outcomes. In addition, teachers will inevitably be faced with new challenges when providing corrective feedback via the computer, which shares many of the features of oral and written correction and, on the face of it, entails making similar decisions to those outlined above. However, the very fact that corrective reactions are supplied through a different medium and the distinctive characteristics of computer-mediated communication bring with them the need to reassess the utility of specific corrective strategies and the ways in which they are implemented. Finally, no matter in what situations, how often, and in what ways inaccurate utterances or sentences are treated, it would be surely worthwhile to conduct learner training in this area with a view to sensitizing students to the different corrective techniques that teachers can avail themselves of, familiarizing them with the most propitious responses to such feedback moves, as well as enhancing their monitoring abilities so that they pay careful attention to their own oral and written output as well as that of others. Although time is a precious commodity in the foreign language classroom, it would definitely not be wasted on this undertaking, since such training would enhance the likelihood that students are on the look-out for, notice, engage with and process the corrective feedback they receive, which is likely to effect the restructuring of their interlanguage systems and translate into long-term learning outcomes.

It is somewhat of a truism to say that more research is needed into the effects of oral and written error correction, but there are reasons to assume that it is more indispensable here than in many other areas of second language acquisition, mainly because, as is the case with form-focused instruction in its entirety, the provision of corrective feedback is a domain in which the concerns, interests and priorities of researchers and practitioners can be reconciled. Even though recent years have witnessed a plethora of empirical investigations in this area which have offered invaluable insights into the efficacy of different feedback types and the factors shaping it, much remains to be done to disentangle the complexities of the interfaces between different forms of reactive negative evidence, the diverse mediating variables, the character of learner response and learning outcomes, with this comment applying in

equal measure to oral and written feedback. It is also of paramount importance that such research be mainly carried out in real classrooms since, insightful as they might be, the findings of laboratory-based studies are difficult to extrapolate to genuine instructional settings and pedagogic recommendations derived from such empirical evidence should invariably be regarded with circumspection.

To be more precise, researchers should investigate the contributions of more specific feedback options and clusters of such options rather than confine themselves to comparing the effects of broad categories that in reality contain very different corrective techniques. For example, while it is instructive to find out whether prompts work better than recasts in the case of speaking, or whether direct correction is more effective than reliance on a set of symbols in the case of writing, it is obvious that each of these techniques may come in many shapes and sizes and combine with other type of feedback in a variety of ways. In fact, when correction is provided in the classroom, seldom is it limited to a single move and it often takes the form of several successive feedback strategies to increase the chances of achieving the learning goals, with the effect that teachers would surely be interested in the efficacy of such combinations. Much more attention should also be given to the factors moderating the contributions of error correction since there is an alarming paucity of studies in this area and they are virtually non-existent in the case of written correction. Thus, studies should be conducted that would look into the effects of individual, linguistic and contextual variables, shedding light on issues that have already been examined to some extent, such as aptitude or developmental readiness, and providing critical insights into areas that still remain by and large an uncharted territory, such as learning styles, willingness to communicate, learning difficulty or contextual macro- and micro-factors. An area the significance of which can hardly be overestimated is also learner engagement, especially in relation to the cognitive and affective response, as without in-depth understanding of how it can be enhanced, efforts channeled into the study of the effectiveness of specific corrective options may turn out to be futile. In light of the fact that computer-mediated feedback is bound to play an increasingly more important role in language education in the near future, all the foci that have just been mentioned should also be carefully examined specifically with reference to this mode.

All of these research endeavors are likely to produce the most valuable insights if they are informed by both psycholinguistic and sociolinguistic perspectives, which brings with it a simultaneous focus on the process and product of error correction, the consensus that there is an urgent need to combine quantitative and qualitative methodologies, as well as to trace the impact of different corrective strategies over time with respect to individual learners. This does not mean of course that studies falling within either of the two paradigms should be abandoned but, rather, that these approaches should be viewed as complimentary and not mutually exclusive. In other words, it is possible on some occasions to close ranks in pursuit of a deeper understanding of error correction by closely inspecting how it works and evolves over time in the microcosm of a single individual, activity or class. Such an approach would constitute a response to the tenets of dynamic systems theories (cf. Larsen-Freeman and Cameron 2008), which view language learning as the outcome

of highly complex interactions between a multitude of interrelated and constantly-changing factors and influences, with the effect that it cannot be captured solely by means of linear relationships. It is also imperative to set more store by the methodology of research into oral and written feedback, regardless of the paradigm that scholars choose to embrace as only in this way can we be confident that the findings provide a sound basis for pedagogical proposals. This means that independent and dependent variables should be precisely operationalized, sample sizes should be sufficiently large, instructional treatments should be long enough, outcome measures should offer a multifaceted picture of learners' competence in terms of explicit and implicit knowledge, comprehension and production, and the movement along developmental sequences, and, in the case of experimental research, control groups must be included, one or more delayed posttests should be conducted and the impact of intervening variables should be isolated.

Complying with these recommendations is bound to enhance the quality of empirical investigations into the contribution of oral and written corrective feedback, with the outcomes of such research serving as reliable signposts for proposing ways in which foreign language education can be improved upon. While the idea of a single technique of error correction that would work best for all learners, linguistic features and teaching situations might indeed be a chimera, as Ellis (2010c) would have it, and therefore a quest for such a corrective feedback strategy might be compared to chasing shadows, in the view of the present author it falls upon researchers to shoulder this responsibility. In all likelihood, we will never be able to identify a feedback option or even a set of such options that will work equally well for everyone, but by attempting to uncover more and more of the missing pieces of this intriguing puzzle we are bound to identify ways of making correction more effective, thereby addressing the concerns of practitioners and optimizing foreign language instruction.

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