Introduction

Corrective Feedback in Second Language Teaching and Learning

Hossein Nassaji and Eva Kartchava

Background

Current theory and research in second language acquisition (SLA) have widely advocated activities that involve a focus on meaning and at the same time provide opportunities for noticing and attention to language forms. Practitioners have also become increasingly aware of the importance of drawing learners' attention to form in classroom instruction. There are different ways of doing so, one of which is through corrective feedback.

Corrective feedback refers to any signal that a learner's utterance may be erroneous in some way. In the SLA literature, it is also known as negative evidence, defined as the information about what is not possible in a given language (e.g., Gass, 2003). This is opposed to positive evidence, which provides information about what is possible in a given language. The difference between corrective feedback and negative evidence is that corrective feedback is mainly provided in response to errors. Therefore, it is reactive. Negative evidence, however, can be both reactive and preemptive. That is, it can be obtained through corrective feedback on errors and also through explanation and presentation of grammatical rules that intend to inform the learner of nontarget-like uses of the language (see Nassaji, 2015, 2016). When negative evidence occurs reactively (i.e., corrective feedback), it can be either in the form of overt responses with a primary intention to correct that form or in the form of implicit feedback in which the correction occurs when the primary focus is on meaning.

Theoretical Issues

Theoretically, corrective feedback has long been a controversial topic in the field of both first and second language (L2) acquisition (see Part I of this

volume). While some have argued that corrective feedback is necessary and assists language acquisition, others have contended that there is no need for corrective feedback and that it has little impact on L2 development. In the field of first language acquisition, for example, one theoretical position known as the nativist theory claims that there is limited explicit corrective feedback in oral language input and that it does not help child language acquisition (Brown & Hanlon, 1970; Demetras, Post & Snow, 1986). In this view, children are born with a genetically determined capacity that predisposes them to acquire the language through exposure to input. This innate capacity is referred to as Language Acquisition Device (LAD) or, more formally, Universal Grammar (UG). While the theory of UG has been used mainly to explain first language acquisition, a number of SLA researchers have extended it to SLA (e.g., Flynn, 1988, 1996; Schwartz, 1993; White, 1991), arguing that similar innate principles are also available to L2 learners either fully or partially and that since L2 learners have access to these principles corrective feedback hardly plays any role.

Other perspectives in L2, on the other hand, such as the cognitive views or cognitive interactionist views, hold that corrective feedback is both needed and facilitative of language acquisition. From a cognitive perspective, corrective feedback promotes noticing of language forms and also helps learners to test their hypotheses about the language they are learning. Making a distinction between declarative and procedural knowledge, skill acquisition theories, for example, argue that language knowledge is first declarative and then becomes procedural through practice (e.g., Anderson, 1985). Declarative knowledge is knowledge about language, and procedural knowledge is knowledge of how to use the language. From this perspective, corrective feedback is essential as it helps the formation of our initial declarative knowledge. Information-processing theories and skill acquisition theories consider corrective feedback crucial as it facilitates forming a mental representation of the target language.

Corrective feedback is also important from an interactionist perspective. This perspective emphasizes the centrality of interaction, particularly negotiation of meaning, which refers to conversational strategies (such as confirmation checks, reformulation, and clarification requests) used to signal or repair problems in communication (e.g., Pica, 1994). From this perspective, interaction with nonnative speakers contains many instances of such interactional modifications, and these modifications provide learners with important sources of comprehensible input and negative evidence (e.g., Gass, 2003; Gass & Varonis, 1994; Long, 1991, 1996; Pica, 1994, 1998). The notion of interactional feedback in SLA is based on an interactionist perspective and the assumption that through interactional feedback learners not only communicate their meaning but also receive negative evidence through the use of the above-mentioned negotiation strategies. Corrective feedback also provides opportunities for output (e.g., Swain, 1995, 2005). When learners receive feedback, they may be pushed

to produce new language and also have opportunities to revise their original utterance to be more accurate and comprehensible. In the SLA literature, this is called modified output and considered as facilitative of language acquisition.

Types and Modes of Corrective Feedback

Corrective feedback can be written and oral and can be provided both verbally and nonverbally (through, for example, body language such as gestures) by the teacher, the computer, or the learner (peer feedback) (see Part III and Part IV of this volume). Oral feedback is verbal and can be provided both during and after oral production. When corrective feedback occurs immediately after an error during conversation, it requires more dependence on online processing and, as such, is usually more cognitively demanding than when feedback is provided after the error. Written feedback, compared to oral feedback, is often delayed, and for that reason, it may be less cognitively demanding as learners have more time to process the feedback. Oral feedback often has the purpose of increasing the accuracy of learners' utterances, whereas written feedback focuses on not only the accuracy of language forms but also the overall quality of writing, including content, ideas, and organization.

There are different ways of providing corrective feedback. In general, feedback types can be classified into reformulation and elicitation. Reformulation strategies are those that rephrase the learner's erroneous utterance into a correct form. They have also been called input-providing because they provide the learner with target-like input (Ellis, 2009). Elicitation strategies do not provide the correct form but rather attempt to prompt the learners to correct their original erroneous output. Therefore, they are called output-prompting (Ellis, 2009). Since elicitations do not supply the correct form, they allow the learner to discover it for themselves. In other words, they provide opportunities for self-repair. Table 0.1 provides a taxonomy of oral corrective feedback.

Written feedback has been typically classified as direct, indirect, and metalinguistic comment or explanation. Direct feedback provides the correct form, whereas indirect feedback indicates the presence of an error without any correction. Both direct and indirect feedback can take different forms and can be used either alone or in combination with other feedback types. Direct feedback, for example, can occur in the form of crossing out the wrong or unnecessary words or phrases, supplying the missing form, highlighting the wrong form and indicating the accurate form by writing the correct form above, beside, or across from the error (Ferris, 2006). Indirect feedback can occur in the form of underlining the error, using codes to indicate the type of error, commenting on the error in the margin, or color-coding the error. Lira Gonzales and Nassaji (2018), for example, found a very frequent use of

Table 0.1 *A taxonomy of oral feedback (from Nassaji, 2015)*

Reformulation (Input providing)	Elicitation (output-prompting)
Recasts: Rephrase all or part of an erroneous utterance into a correct form.	Clarification requests: Occur when an utterance is not fully understood and the learner is asked for clarification.
Direct correction: Rephrases an erroneous utterance into a correct form and also clearly indicates the erroneous part.	Repetition: Repeats the erroneous utterance with a rising intonation.
	Direct elicitation: Elicits the correct form, for example, by repeating the erroneous utterance up to the error and waiting for the correction.
	Metalinguistic cue: Provides metalinguistic information.

direct feedback compared to indirect feedback on students' writings by teachers in such different instructional contexts as elementary, secondary, and college-level settings. Written feedback can also be provided electronically via the computer or any other technological devices to correct an error or provide an indication that an error has occurred.

Nonverbal feedback occurs through body movements such as gestures, facial expressions, head, hand, and finger movements. For example, frowning or shaking the head could be used to show that an error has taken place. Body movements could be used to indicate where the error has occurred or the nature of the error.

As noted earlier, feedback can also be provided by the student, both orally and in written form (called peer feedback or peer review). Research indicates that peer feedback is being increasingly used in recent years in language classrooms and that it has positive effects on students' learning, particularly if students are trained to provide it. What's more, both teachers and students consider it a valuable resource.

Corrective feedback can vary in terms of its focus. In this respect, a distinction has been made between extensive and intensive feedback in the oral feedback literature (e.g., Nassaji, 2017) and between focused and unfocused (comprehensive) feedback in the written feedback literature (e.g., Sheen, Wright & Moldawa, 2009). Extensive or comprehensive feedback is provided on a wide range of linguistic forms, whereas intensive or focused feedback is provided on a single or a small number of linguistic targets. Theoretically, intensive/focused feedback has been viewed to be more effective than extensive feedback because learners may be more likely to notice the feedback when it targets a single error repeatedly. However, it is possible that extensive feedback might also be effective, for when the feedback is provided extensively, learners may be exposed to additional instances of the feedback and therefore may become better aware of the presence of the feedback, particularly if it is implicit in nature (e.g., Nassaji, 2017).

Researching Corrective Feedback

Owing to both the theoretical and the pedagogical importance of corrective feedback and also the debate around its usefulness, many studies have examined its role in various contexts. This research has been both descriptive (observational) and experimental, conducted inside and outside the classroom, targeting different language forms including grammar, vocabulary, and pragmatics. Observational or descriptive research has attempted to determine the degree to which feedback occurs in the different L2 learning contexts, its distributional patterns, and the types of response, if any, learners provide to such feedback. In much of the descriptive research on oral feedback, the usefulness of feedback has been measured by learner responses, which has been called uptake or repair. In written feedback, this has been measured by the degree to which learners revise their text or transfer their knowledge into new texts (e.g., Karim & Nassaji, 2020; Suzuki, Nassaji & Sato, 2019). The aim of experimental research, in turn, has been to determine more directly the effects of feedback on learning and the factors that might mediate feedback effectiveness. It has also investigated the effect of different types of feedback on different target structures and/or on different types of knowledge (i.e., both explicit and implicit knowledge, see, for example, Nassaji, 2015, 2020).

Depending on its purpose, the findings of corrective feedback research have been summarized in a number of recent reviews and meta-analyses (e.g., written feedback: Kang & Han, 2015; oral feedback: Li, 2010; Lyster & Saito, 2010; Lyster, Saito & Sato, 2012; Mackey & Goo, 2007; Nassaji, 2015, 2016; Russell & Spada, 2006; computer-mediated feedback: Yousefi & Nassaji, 2019; Ziegler, 2016, see also the various chapters of this volume). The overall conclusions are that corrective feedback is helpful in general. Descriptive studies, for example, have shown that corrective feedback occurs frequently in L2 classrooms and that learners revise their erroneous output in response to feedback. Experimental studies have also confirmed the beneficial effects of feedback, but at the same time, they have shown that these effects are not the same across feedback types and contexts and, as such, may vary depending on a number of other factors, including the type of target structure (see below).

Additionally, studies have explored learners' perspectives and/or perceptions of both oral and written feedback and their relationship to feedback types and feedback targets (Amrhein & Nassaji, 2010; Egi, 2010; Fu, 2012, see also Part VII of this volume). Using various forms of retrospective and introspective data collection tools – such as think-aloud, stimulated, or immediate recall as well as various kinds of self-report data (e.g., questionnaires, diaries, journals) – perception studies have helped us understand the relationship between teachers' intention for feedback and learners'

interpretation of that feedback. Some of the chapters of this handbook have examined these issues in detail.

As noted earlier, corrective feedback can also occur via the computer and other technological devices. In recent years, a number of studies as well as meta-analyses and reviews have examined the use and effectiveness of feedback through technology (e.g., Felix, 2005a, 2005b; Liu et al., 2002; Nassaji & Kartchava, 2019; Yousefi & Nassaji, 2019; Ziegler, 2016, see also Part VI of this volume). These studies have shown that technology-mediated feedback can promote L2 learning and that its effectiveness may be different from that of face-to-face feedback (see Yousefi & Nassaji, 2019).

Factors Affecting the Role of Feedback

The findings of all feedback studies, including those of the meta-analyses, confirm that corrective feedback is beneficial for L2 learning in general and that such feedback promotes L2 learning. However, they have also found notable variability in results, which suggests that the role of corrective feedback is not universal and can differ depending on a number of factors, including the type of feedback, the nature of the target form, learners' level of language proficiency, and their developmental readiness. Mackey and Philp (1998), for example, found that learners who were developmentally more advanced benefited more from recasts than those who were developmentally less advanced. Ammar and Spada (2006) found that high-proficiency learners benefited more from recasts than lower-proficiency learners. The effectiveness of feedback has also been shown to vary depending on the way learners' attention is directed to the feedback (Nabei & Swain, 2002), the type of tasks used (Gass, Mackey & Ross-Feldman, 2005), and even learners' gender (Ross-Feldman, 2007). Individual differences – such as learners' working memory, age, anxiety, aptitude, analytic ability, and learner literacy (Bigelow et al., 2006) – may also impact the degree to which learners benefit from feedback (see Part VIII on the role of individual differences). In their meta-analysis of oral feedback studies in the classroom, Lyster and Saito (2010) found an important effect for age, with younger learners benefiting more from feedback than older learners.

Both the instructional and the interactional contexts may also mediate feedback effectiveness. Mackey and Goo's (2007) meta-analysis found that interactional feedback had a significantly greater effect in foreign language contexts than in second language contexts; this was also true for the laboratory versus classroom settings. The effect of both oral and written feedback may not be the same for different target structures either (Long, Inagaki & Ortega, 1998) and may also vary depending on whether the learners are required to revise their previous errors or use their knowledge in new contexts. For example, examining the effect of both direct

and indirect written corrective feedback on the English indefinite article and the past perfect tense, Suzuki et al. (2019) found that while both feedback types improved the accuracy of the two target structures in revision, the transfer effect of feedback to new pieces of writing was found only for the past perfect.

Another important mediating factor is the feedback focusedness, that is, whether the feedback is provided extensively on a wide range of errors or intensively on certain preselected errors (see Part IV of this volume). Some researchers have suggested that intensive recasts may be more effective than extensive feedback, as it draws learners' attention to form more efficiently (e.g., Ellis & Sheen, 2006; Lyster et al., 2012). However, studies that have compared focused versus unfocused (or comprehensive) feedback or extensive versus intensive feedback have shown variable results. For example, comparing the effectiveness of focused and unfocused written feedback, Ellis et al. (2008) found similar gains for both feedback types. Sheen et al. (2009), however, found more effects for focused than unfocused written feedback. Kamiya (2015) found no clear-cut difference between extensive and intensive oral recasts. Yet, Nassaji (2017) found extensive recasts to be generally more effective than intensive recasts. Part of the reason for these differences could be the way feedback focusedness has been operationalized. For instance, Ellis et al. used a range of different feedback types in their study. Therefore, it is unclear whether the results were because of the focus of the feedback or the differences in the types of feedback used. Sheen et al. used the feedback very explicitly, providing the correct form and drawing the learners' attention to the error through metalinguistic explanation. Nassaji, however, used implicit recasts.

Last but not least, the effectiveness of feedback may also vary depending on how it is measured (see Nassaji, 2020 for a discussion). Some studies, for example, have found that recasts may have more positive effects on oral measures than written ones (e.g., Révész, 2012) or on tests that measure implicit rather than explicit knowledge (e.g., Lyster & Saito, 2010; Mackey & Goo, 2007). Of course, the effects of outcome measures might also interact with those of other variables, such as the context of feedback and/or the type of target structure (e.g., Norris & Ortega, 2001).

All these and many other issues on corrective feedback are addressed in detail in the various chapters of this handbook. In what follows, we describe the aims and content of the volume as well as what each chapter covers.

The Aims of the Volume

The role and importance of various forms of corrective feedback have been examined in numerous studies in different instructional contexts and with different L2 learners and languages. The results of most of

these studies have been published in many individual journal articles and book chapters. Yet, until now, there has been only one collection (Nassaji & Kartchava, 2017) that has drawn the findings of some of these investigations together and discussed their applications in real-world learning situations. This collection, however, was subject to space limitation and as a result could not provide a thorough treatment of the topic. Recognizing the burgeoning need to communicate the findings of current research on corrective feedback to various audiences, including researchers and teachers, we decided to put together this handbook, which is intended to provide the first comprehensive source of information on corrective feedback in a single volume. The specific aims are to (a) provide an in-depth analysis and discussion of research and theory in this area, (b) bring together state-of-the-art chapters that address recent developments in a range of core areas of corrective feedback, including oral, written, computer-mediated and nonverbal feedback as well as studies of various factors that may influence feedback effectiveness, including learner and teacher perception and the role of various individual learner differences, (c) examine the current methodological tools and perspectives that have been used to study the contributions of corrective feedback to L2 learning and pedagogy, and (d) connect theory and research with classroom practice – a link that is timely, yet currently noticeably absent from most of the writings in the field.

The Intended Audience

This handbook provides a key single-volume resource for all those interested in gaining insight into the role of corrective feedback in L2 learning and how it can be used to enhance L2 teaching. Given its scope, it will appeal to a broad set of readers, including researchers and graduate students in applied linguistics and TESL as well as teachers, teacher educators, and materials developers, who are interested in learning about the role of feedback in second language teaching and learning. Since the chapters are theme-based, each one can be read as a stand-alone piece or as part of an integrated whole that seeks to enable the reader to develop a coherent understanding of the themes covered. It can also be used as a textbook in courses on second language acquisition and/or those concerned specifically with corrective feedback. Hence, the collection could prove useful for both introductory and more specialized courses. Finally, since the volume includes a comprehensive reference on theory and research in a range of core areas of corrective feedback, it can be used as a guide among nonacademic audiences, such as school boards and individual practitioners, as well as appeal to numerous other stakeholders internationally.

The Organization of the Book

The handbook contains thirty-six chapters that examine various theoretical, empirical, and methodological issues currently addressed in the field of L2 corrective feedback. For ease of access, we have organized these chapters into the following eight parts.

Part I: Theoretical perspectives on corrective feedback
Part II: Methodological approaches in the study of corrective feedback
Part III: Different delivery modes of corrective feedback
Part IV: Feedback provider, feedback intensity, and feedback timing
Part V: Corrective feedback and language skills
Part VI: Contexts of corrective feedback and their effects
Part VII: Learners' and teachers' feedback perspectives, perceptions, and preferences
Part VIII: Individual differences, tasks, and other language and learner-related factors

Part I

Part I contains four chapters that discuss the different theoretical perspectives on corrective feedback including the behaviorist, the innatist, the interactionist, the cognitive, and the sociocultural perspective. In Chapter 1, Han examines the behaviorist and innatist perspectives. Arguably, these are the most established yet polarizing perspectives, which have profoundly impacted all aspects of second language inquiry, including the role of error correction. The chapter begins by describing each of the paradigms individually, highlighting their underlying tenets, orientations toward second/additional language development, and their views on errors and their treatment. It also compares and discusses the similarities and differences in these approaches while at the same time underscoring their contributions to past and present error correction research and pedagogy. In Chapter 2, Abbuhl examines the interactionist approach to corrective feedback. The chapter first discusses the basis of the theory with respect to error correction and then evaluates these against other extant research paradigms. After reviewing the early and current research evidence within the paradigm, the chapter suggests directions for future interactionist investigations on both known and developing issues and the contributions these may make to classroom teaching. In Chapter 3, Leow and Driver consider cognitive theoretical perspectives on corrective feedback. Here, they use a coarse-grained theoretical feedback processing framework to illuminate how cognitive processes involved in error correction are viewed within major cognitive viewpoints on L2 development. For each viewpoint, the authors first present its theoretical underpinnings and

then examine the importance that the theory assigns to corrective feedback as well as the type of processing it requires for feedback delivery. Nassaji, in Chapter 4, considers the role of corrective feedback from a sociocultural perspective. Following an examination of the theoretical underpinnings, the chapter reviews empirical evidence on corrective feedback offered by the research conducted from this perspective and suggests pedagogical implications for the delivery of effective feedback.

Part II

Part II focuses on the methodological approaches in the study of corrective feedback. It consists of four chapters (Chapters 5 to 8). In Chapter 5, Mackey, Bryfonski, Parlak, Pipes, Sağdıç, and Suh discuss tools that have been used to elicit and examine the effectiveness of feedback for language learning. The authors consider established and novel instruments to collect learner-external and learner-internal data across feedback modes, in both classroom and laboratory settings. Each instrument is considered in terms of its purpose, utility, and effective administrative procedures; illustrative studies that employed the tool in their design are also cited and/or explained. Implications and special considerations for the implementation of these instruments in research and teaching are provided at the end. Chapter 6 and Chapter 7 address research methodologies used to explore corrective feedback in the laboratory and classroom settings, respectfully. Loewen and Gass (Chapter 6) begin by suggesting an expanded guideline on how to distinguish between the classroom and laboratory contexts, arguing that the traditional differentiation is limiting and often difficult to apply. They propose that laboratory-based research, regardless of focus, should be distinguished from classroom research in terms of the physical location, the one who provides instruction (i.e., instructor/researcher/different interlocutor), and the nature of instructional tasks employed. Drawing on the existing corrective feedback research, the authors first illustrate the application of these principles and then show how their manipulation, even unintentional, could yield conflicting results. Hence, they urge caution and call on future studies to adopt improved and more overt contextual operationalizations. In Chapter 7, Valeo explores the impact of classroom-based research on our understanding of the role and contributions of oral and written corrective feedback. Examining key studies in this area, the chapter considers how specific research methodologies (including descriptive and experimental types) applied within particular instructional settings can be affected by the various contextual features present (even if unaccounted for) and in turn, affect the findings. Reiterating the importance of context in feedback provision, the author urges both researchers and teachers to reflect and expand on their practices, suggesting possible directions to consider.