

# Corrective Feedback in Second Language Acquisition

Mounira El Tatawy

*Teachers College, Columbia University*

## ABSTRACT

Over the last few years, the role played by corrective feedback in language acquisition has become a highly controversial issue. In the field of First Language Acquisition (FLA), researchers express strong reservations concerning the effect that negative evidence has on FLA, if there is any at all. In the field of Second Language Acquisition (SLA), however, there appears to be a growing consensus among the majority of researchers concerning the significance of the role played by negative evidence in the process of SLA. This literature review will focus mainly on the role played by corrective feedback in SLA. While corrective feedback clearly relates to both oral and written discourse, the focus of this discussion will center on oral production, since the preponderance of research has largely focused on this aspect. In the following sections of this review, the meaning of corrective feedback will be discussed, and the different theoretical stances towards its role in SLA examined. Empirical studies that explore the impact corrective feedback has on SLA will be reviewed, followed by a discussion of some of the issues that loom large in research in the area of corrective feedback and its role in SLA.

## DEFINITION OF TERMS

There are various terms used in identifying errors and providing corrective feedback in the SLA literature—the most common being *corrective feedback*, *negative evidence*, and *negative feedback*. Because of possible confusion arising from the use of this terminology, a brief review of the definitions of terms and of the different types of feedback is presented below.

Chaudron (1988) has pointed out the fact that the term corrective feedback incorporates different layers of meaning. In Chaudron's view, the term "treatment of error" may simply refer to "any teacher behavior following an error that minimally attempts to inform the learner of the fact of error" (p. 150). The treatment may not be evident to the student in terms of the response it elicits, or it may make a significant effort "to elicit a revised student response" (p. 150). Finally, there is "the true" correction which succeeds in modifying the learner's interlanguage rule so that the error is eliminated from further production (p. 150).

Lightbown and Spada (1999) define corrective feedback as:

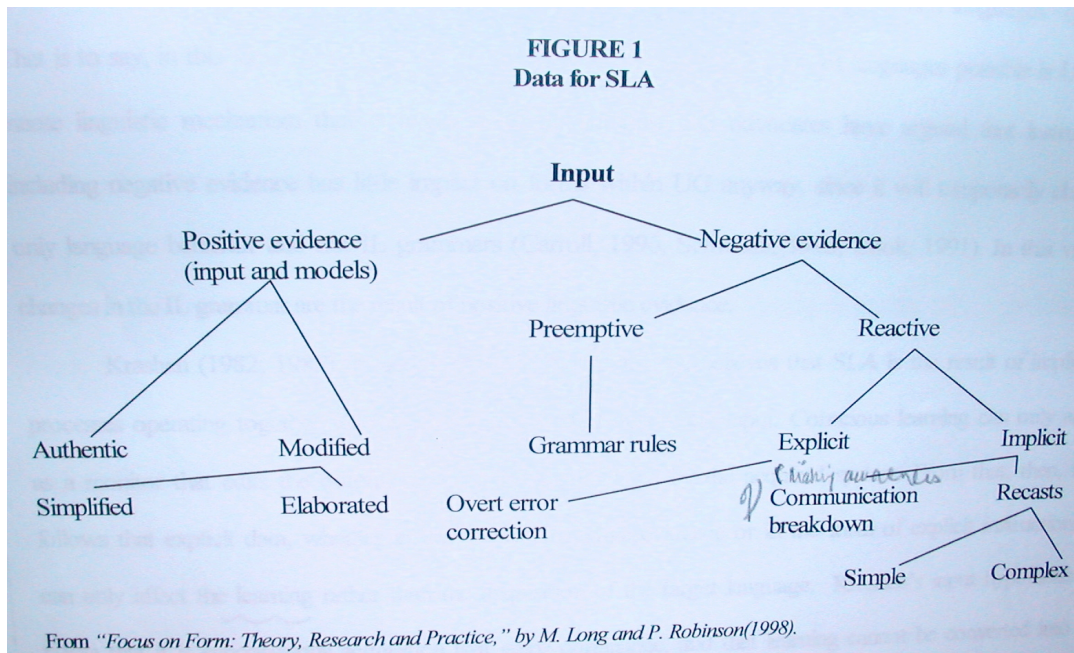
Any indication to the learners that their use of the target language is incorrect. This includes various responses that the learners receive. When a language learner says, 'He go to school everyday', corrective feedback can be explicit, for example, 'no, you should say goes, not go' or implicit 'yes he goes to school every day', and may or may not include metalinguistic information, for example, 'Don't forget to make the verb agree with the subject'. (p. 171-172)

According to Schachter (1991), corrective feedback, negative evidence, and negative feedback are three terms used respectively in the fields of language teaching, language acquisition, and cognitive psychology. Different researchers often use these terms interchangeably. The feedback can be explicit (e.g., grammatical explanation or overt error correction) or implicit. Implicit correction includes, but is not limited to, confirmation checks, repetitions, recasts, clarification requests, silence, and even facial expressions that express confusion.

Long (1996) offers a more comprehensive view of feedback in general. He suggests that environmental input can be thought of in terms of two categories that are provided to the learners about the target language (TL): positive evidence and negative evidence. Long defines positive evidence as providing the learners with models of what is grammatical and acceptable in the TL; and negative evidence as providing the learners with direct or indirect information about what is unacceptable. This information may be:

Explicit (e.g., grammatical explanation or overt error correction) or implicit (e.g., failure to understand, incidental error correction in a response, such as a confirmation check, which reformulates the learners’ utterance without interrupting the flow of the conversation—in which case, the negative feedback simultaneously provides additional positive evidence—and perhaps also the absence of the items in the input. (p. 413)

Long (2001) more recently has offered the following framework incorporating the different types of positive and negative evidence in relation to the linguistic environment, i.e., input.



According to the above classification, negative evidence and positive evidence constitute the only two types of evidence available to the language learner. Each type is further divided

into subtypes. The frequency of occurrence in different second language (L2) learning contexts as well as the differential effects of different types of negative evidence on interlanguage (IL) development will be discussed in the following sections of this literature review.

## **THEORETICAL STANCES ON THE ROLE OF CORRECTIVE FEEDBACK IN SLA**

The theoretical pendulum has swung back and forth regarding the role assigned to negative evidence in the process of SLA. There is a debate on the nature of the driving force behind SLA, i.e., whether it is positive evidence or negative evidence that has the greater impact. According to nativist theory, advocated by Chomsky (1975), negative evidence hardly plays any role at all. This is due to the fact that, for the nativists, what makes language acquisition possible is Universal Grammar (UG), “the system of principles, conditions, and rules that are elements of properties of all human languages” (p. 29). That is to say, in this view of language learning, what makes the acquisition of language possible is UG, and the innate linguistic mechanism that is available to all humans. UG advocates have argued that instruction, including negative evidence, has little impact on forms within UG anyway, since it will temporarily change only language behavior and not IL grammars (Carroll, 1996; Cook, 1991; Schwartz, 1993). In this view, changes in the IL grammar are the result of positive linguistic evidence.

In addition, Krashen (1982, 1985) believes that SLA is the result of implicit processes operating together with the reception of comprehensible input. Conscious learning can only act as a monitor that edits the output, after it has been initiated by the acquired system. From this, then, it follows that explicit data, whether in the form of negative evidence or in the form of explicit instruction, can only affect the learning rather than the acquisition of the target language. Krashen’s input hypothesis posits that it is subconscious acquisition that gains dominance, and that learning cannot be converted into acquisition, even though adults can both subconsciously acquire languages and consciously learn about languages. In short, for Krashen, as for the nativists, negative evidence has a barely discernable effect on SLA.

Krashen’s views and theories of language learning have been challenged on the grounds that while comprehension is essential for language acquisition, such acquisition does not entail unconscious or implicit learning processes; and that *noticing* is indispensable for the acquisition process (Ellis, 1991; Gass, 1988, 1990, 1991; Gass & Varonis, 1991; Schmidt, 1990, 1994; Schmidt & Frota, 1986). According to the noticing hypothesis, in order for input to become intake for L2 learning, some degree of noticing must occur, and that it is corrective feedback that triggers that learners’ noticing of gaps between the target norms and their IL, and thus leads to subsequent grammatical restructuring.

According to Schmidt (1990), “subliminal language learning is impossible, and that intake is what learners consciously notice. This requirement of noticing is meant to apply equally to all aspects of language” (p. 149). Language learners, however, are limited in what they are able to notice. The main determining factor is that of attention. As Schmidt (1994) points out, “while the intention to learn is not always crucial to learning, attention to the material to be learned is” (p. 176). Attention, in addition, “also controls access to conscious experience” (p. 176), thus allowing the acquisition of new items to take place.

Gass (1988, 1990, 1991), moreover, has argued against the notion that learners, with the mere presentation of comprehensible input, would convert it to intake and subsequently to

output. According to her, for learners to be able to internalize input in order to affect the acquisition process, they must not only comprehend this input, but also must notice the mismatch between the input and their own IL system. She points out that “nothing in the target language is available for intake into a language learner’s existing system unless it is consciously noticed” (1991, p. 136). Corrective feedback, for Gass, functions as an attention getting device. She further argues that without direct or frequent corrective feedback in the input, which would permit learners to detect discrepancies between their learner language and the target language, fossilization might occur. Gass and Varonis (1994), moreover, point out that “the awareness of the mismatch serves the function of triggering a modification of existing L2 knowledge, the results of which may show up at a later point in time” (p. 299). Similarly, Ellis (1991) shares the view that the acquisition process includes the steps of noticing, comparing, and integrating.

There is further evidence of the role of corrective feedback in the hypothesis testing models of acquisition. In these models, the learner is assumed to formulate hypotheses about the TL, and to test these hypotheses against the target norm. In this model of learning, corrective feedback, or negative data, plays a crucial role (Bley-Vroman, 1986, 1989). Ohta (2001) takes corrective feedback a step further by showing that if the correct form is provided, learners may have the chance to compare their own production with that of another. In this way, corrective feedback may stimulate hypothesis testing, giving the learner the opportunity to grapple with form-meaning relationships. Corrective feedback that does not provide the correct form, on the other hand, may force the learners to utilize their own resources in constructing a reformulation. In either case, corrective feedback may facilitate L2 development. According to Chaudron (1988), the information available in feedback allows the learners to confirm, disconfirm, and possibly modify the hypothetical, transitional rules of their developing grammars. These effects, however, “depend on the learners’ readiness for and attention to the information available in feedback. That is, learners must still make a comparison between their internal representation of a rule and the information about the rule in the input they encounter” (p. 134). Finally, Schachter (1991), with reference to the above views, points out that it is due to the corrective feedback the learners receive that they abandon their wrong hypotheses and immediately switch to formulating new ones.

On the question of what kind of evidence can disconfirm incorrect hypotheses about the L2, White (1988) states that positive evidence alone is insufficient. Concerning whether or not L2 acquisition can progress on the basis of positive evidence alone, she further suggests that it cannot, and that “there will be cases where change from X to Y will require negative evidence” (p. 148). There are certain situations, she argues, which entail negative evidence, i.e., drawing learners’ attention to the fact that certain forms are not allowed in the target language. According to White (1988), negative evidence is particularly required when learners adopt grammars that generate a superset of the grammars actually allowed in the target language. In other words, negative evidence is necessary when the learners need to go from a broader grammar (superset) to a narrower grammar (subset). A case in point is that there is no positive evidence that highlights that English does not allow null subjects. Corrective feedback, in cases like the ungrammaticality of null subjects in English, she argues, will help put L2 learners on the right track.

This brings us to the view of SLA as cognitive skill acquisition. In this view of learning, language acquisition includes interaction between input, the cognitive system, and the learner’s perceptual motor system. According to this model of language learning, feedback is essential

(Johnson, 1988, 1996). This is due to the fact that “it has the properties of informing, regulating, strengthening, sustaining, and error eliminating” (Han, 2001, p. 6).

Given the considerable research on the role of corrective feedback in SLA from the various models of acquisition discussed in this review, it seems that there is a growing belief that interaction between innate and environmental factors is necessary for language acquisition. This leads to Long’s (1996, 1998) updated version of the interactionist hypothesis. In this model, Long (1996) proposes that:

Environmental contributions to acquisition are mediated by selective attention and the learner’s developing L2 processing capacity, and that the resources are brought together most usefully, although not exclusively, during negotiation for meaning. Negative feedback obtained during negotiation work or elsewhere may be facilitated of SL development, at least for vocabulary, morphology, and language specific syntax and essential for learning certain specifiable L1-L2 contrasts. (p. 414)

According to this model of acquisition, interaction that includes implicit corrective feedback is facilitative of L2 development.

Interest in the impact that corrective feedback has on IL development, and in the roles of both teachers and students in corrective feedback episodes, has spawned a number of recent studies on the topic. This research has been most prolific in ESL and immersion classrooms. Some of the studies investigating the role of corrective feedback in SLA will be reviewed in the following section.

## REVIEW OF STUDIES

Given the importance of corrective feedback in SLA theory, an increasing number of studies have been devoted to examining the relationship between feedback and L2 learning. Tomasello and Herron (1988, 1989) carried out two empirical studies that investigated the effects of two methods for correcting learners’ overgeneralizations and transfer from the L1. The subjects in both studies were college students learning French as a Foreign Language. The students were randomly assigned to two groups. Each group was subject to one teaching condition for one semester, and to the other teaching condition for the following semester. In the first control condition, the learners were explicitly taught the exception to the rule as an exception, and in the second condition, which Tomasello and Herron (1988, 1989) called the *Garden Path Technique*, the learners *were led down the garden path* where they were first presented with examples that encouraged them to induce and generalize the rule. Next, the learners were presented with the exceptions to the rule, without being told that these were exceptions. The learners were thus induced into making errors. The teacher then immediately corrected such errors. At this point, it must be noted that the induced errors in both studies were committed in a safe environment where the errors were considered an indication of learning.

In both studies, the analysis or the subsequent formal testing indicated that the students learned the exception better in the Garden Path condition, and that such learning was sustained throughout the course of the semester. Tomasello and Herron thus concluded that students learn best when they generate a hypothesis and receive immediate feedback. According to

them, this creates the best condition under which learners may cognitively compare their own production to the TL.

In the same vein of research, experimental and quasi-experimental studies conducted in Canada report positive results with respect to the effect of formal instruction and corrective feedback on improving students' accuracy in using the target language (Lightbown & Spada, 1990; White, 1991). The majority of the language programs in the Canadian setting have adopted the principles of communicative language teaching, where the emphasis is more on fluency and communication and less on accuracy. Such emphasis seems to have resulted in the failure of the majority of learners to reach the desired level of linguistic accuracy. Thus, Canadian researchers have had a particular interest in investigating whether extensive form-focused instruction and corrective feedback would result in improving the level of the students' accuracy in using the TL. Some of the seminal studies are summarized below.

Lightbown and Spada (1990) examined the effects of corrective feedback and form-focused instruction on SLA in the context of intensive ESL programs. The overall aim of the study was to investigate relationships between instruction, interaction, and acquisition. The subjects in this study (N=100) were all native speakers of French enrolled in five-month intensive ESL courses in either grades five or six in Quebec. The findings suggested that overall language skills are best developed through meaning-based instruction in which form-focused activities and corrective feedback are provided.

White (1991) conducted an experimental study that investigated the effectiveness of form-focused instruction, including positive and negative evidence, at assisting L2 learners in arriving at the appropriate properties of the TL. The linguistic focus on this study was concerned with one of the potential learnability problems for L1 French speakers acquiring English; that of verb-raising, in particular, English adverb placement. The participants in this study (N=164) were 11 and 12-year-old Francophone learners of English. The focus, as mentioned earlier, was on communicative language teaching where error correction and form-focused instruction play a minor role. The results of this study indicated that explicit evidence, both negative and positive, is more effective in assisting L2 learners acquire the properties of the TL than naturalistic positive evidence alone. The results from the follow-up study, however, revealed that the children who were tested did not maintain the knowledge, and that they reverted to the level of knowledge they were at prior to instruction.

An important issue that was not addressed in White's study (1991) is whether providing the learners with naturalistic positive evidence would be sufficient to trigger parameter resetting. Trahey and White (1993) addressed this issue. Their study investigated whether preemption operated in L2 acquisition; that is, whether positive L2 input which is incompatible with the L1 parameter setting is sufficient to force parameter resetting. The study employed a pretest, posttest, and delayed posttest design. The subjects (N=54) were fifth-grade Francophone children in two classes in the same intensive ESL programs in Quebec, Canada. The subjects were exposed to input for an hour a day for two weeks consisting of a flood of materials with English adverbs naturalistically inserted. The same tasks were administered at all three test sessions. The results show that exposures to the intensive input flood resulted in high levels of acceptance of SAC; the SVAO order, however, was not significantly affected. The results indicated that positive evidence alone was not sufficient to cause preemption of the L1 setting. Hence, the need for negative evidence becomes prominent.

The studies reviewed so far (Lightbown & Spada, 1990; Tomasello and Herron, 1988, 1989; Trahey & White, 1993; White, 1991) provide positive evidence for the effect of formal instruction and corrective feedback in improving the students' accuracy level on certain targeted linguistic features. Carroll and Swain (1993) and DeKesyer (1993) point out, however, that such studies did not isolate formal instruction from corrective feedback and that the results of the studies could be attributed to either formal instruction alone, or to corrective feedback alone, or to a combination of both. In other words, those studies did not provide a clear-cut distinction between the effect of explicit formal instruction in isolation and that of providing corrective feedback. It was therefore hard to trace any improvement to the effect of corrective feedback alone. Schachter (1993) pointed out the difficulty in tracing the effect of negative evidence in the course of SLA. In order to facilitate such a task, she recommended that further research target specific linguistic features. Carroll and Swain (1993), on the other hand, advocated conducting experimental research rather than classroom-based research. According to them, the impact of negative evidence can best be traced in tightly controlled experimental settings, where the only difference among the groups is the provision of negative evidence to the experimental group.

Carroll and Swain (1993), therefore, in a tightly controlled study, investigated the effects of different types of negative feedback on SLA, in particular, the acquisition of the English dative alternation. The aim of this study was to determine empirically whether feedback could assist the learners in acquiring the appropriate abstract constraints on an overly generalized rule. The subjects (N=100) were divided into different groups according to the type of feedback they would receive upon making an error. The results of this study revealed that all treatment groups did significantly better than the control group. Implicit as well as explicit types of feedback were found to be beneficial, and both led to learning. Interestingly, giving explicit metalinguistic information was found to be more helpful than simply telling a learner that he or she made a mistake, or giving him or her the desired response.

Though the findings of this study lend support to the view that implicit as well as explicit types of feedback assist adult second language learners in learning abstract linguistic generalizations, a few additional issues need to be taken into consideration. First and foremost, the period between the two recall sessions was rather short. Therefore, the study did not provide any evidence for long-term retention. Secondly, there was no variety of performance tasks indicating that learners would generalize their learning to other tasks. Finally, there was no time limit for the feedback provided, and thus, the difference in performance could be due to the amount of feedback they received. The study, nevertheless, is significant, and provides evidence that adult language learners use negative feedback to learn specific and abstract linguistic generalizations and their applications.

A more recent and growing line of research investigates the differential effects of different types of negative evidence on various aspects of L2 acquisition. Following L1 acquisition research (Bohannon & Stanowics, 1988; Demetras, Post, & Snow, 1986; Farrar, 1992; Saxton, 1997), there has been a noticeable interest in the role of recasts in L2 learning (Doughty & Varela, 1998; Han, in press; Long, Inagaki, & Ortega, 1998; Lyster, 1998a, 1998b, 2001; Lyster & Ranta, 1997; Mackey, Gass, & McDonough, 2000; Mackey & Philp, 1998; Oliver, 1995). This is due to several factors: the unobtrusive nature of recasts in the flow of communication, the immediacy of recasts, and the widely shared belief that the provision of feedback immediately following an error is essential for the learners to notice a contrast between their faulty utterance and the target form—the first step in the eventual

abandonment of the wrong form and the acquisition of the correct one (Nicholas, Lightbown, & Spada, 2001).

Long (1996) defines recasts as “utterances which rephrase a child’s utterance by changing one or more sentence components (subject, verb, or object) while still referring to its central meanings” (p. 434). This definition is in accordance with Lyster and Ranta’s (1997) definition, in which a recast is defined as “the teacher’s reformulation of all or part of a student’s utterance minus the error” (p. 46). Ohta (2001) adds that recasts are immediately subsequent to the erroneous utterance and that they may contrast with learner’s utterances phonologically, morphologically, syntactically, or semantically, but are based on the learner’s erroneous utterance and maintain semantic contiguity with it” (p. 141). Differential effects of recasts on various aspects of L2 acquisition have been the focus of a number of recent studies, some of which are noted below.

Oliver (1995) investigated the role played by negative evidence in native speaker (NS)-nonnative speaker (NNS) interactions. This study examined the pattern of interaction in child NS-NNS conversation to determine whether or not negative feedback existed, and whether or not NNSs incorporated such feedback into their subsequent production. The study focused on both forms and implicit feedback: recasts and negotiation strategies, including repetition, clarification requests, and comprehension checks. The analysis of the data demonstrated that the child NS-NNS dyads interacted in a variety of ways, and that implicit negative feedback comprised a substantial proportion of the interaction. The analysis, moreover, showed that the type of the NNS error triggered the type of NS response. It was found that negotiations occurred in response to multiple errors, while recasts occurred in response to singular error. In other words, negotiations occurred to clarify meaning and recasts to correct form.

Due to the synchronic nature of the study, production was considered the only evidence for acquisition. Acquisition, however, could occur before it appeared in the production. Another limitation of the study is that for a recast to be considered as incorporated into the production of the NNS, it had to appear in the immediate turn that followed. In many cases, recasts were incorporated in later turns. It was also difficult to prove that such incorporations were due to the negative evidence, and not due to the fact that the error was a slip of the tongue rather than lack of competence. The need for further longitudinal studies as well as carefully contrived pretest-posttest experimental studies is therefore evident. The study, however, supports the facilitative role of negative feedback in SLA.

Lyster and Ranta (1997) examined corrective feedback from the perspective of an analytic teaching strategy. The study illustrated the types and distribution of corrective feedback moves and their relationship to learner uptake. The overall aim of the study was to determine, first, whether error treatment is indeed negotiable and if so, to what extent such pedagogically motivated negotiation (i.e., of form) occurs in communicative classrooms and, second, what moves constitute such an exchange. The database analyzed for this study was comprised of 27 lessons totaling 18.3 hours. The teachers were aware that the researchers were interested in recording classroom interaction. They were unaware, however, of the fact that the research focused mainly on corrective feedback. Analysis of the data revealed that there were seven different types of feedback used by the four teachers in the study: explicit correction, recasts, clarification requests, metalinguistic feedback, elicitation, repetition, and multiple feedback (which referred to combinations of more than one type of feedback). It was found that recasts were by far the most widely used form of feedback of all the teachers’ corrective feedback moves; more than half involved recasts. In the analysis of student turns immediately following



teacher feedback (referred to as *uptake*) it was found that 69% of recasts were followed by topic continuation; 18% of recasts were immediately repeated or incorporated into student utterances and were coded as *needs repair*. Recasts did not lead to any student-generated forms of repair. The explanation that the researchers assigned to this was that recasts already provided correct forms to learners. These findings suggest the need for teachers to implement various types of feedback, particularly those that lead to student-generated repair, namely elicitation, metalinguistic clues, clarification requests, and repetition of error. These four types initiated what Lyster and Ranta characterize as negotiation of form in that they engage learners more actively by helping them to draw on what they already know, rather than providing learners with correct forms.

Using the same database, Lyster (1998a, 2001) further investigated the relationship among error types and corrective feedback in relation to immediate learner repair. Analysis of the data highlighted 921 learners' errors. The errors were coded as grammatical, lexical, phonological, or as unsolicited use of L1 (English). The corrective feedback moves were coded as explicit correction, negotiation of form (i.e., elicitation, metalinguistic clues, clarification requests, or repetition of error), and recasts. The analysis showed that 61% of learners' errors were followed by the teachers' corrective feedback. The remaining 39% were followed by topic-continuation moves. Of the 61% corrective feedback moves, 33% led to learner repair.

The findings of this study revealed that the teachers were more systematic and consistent in their provision of feedback than other teachers observed in previous studies. The interaction between error type and feedback type was significant, confirming that error type affected choice of feedback. While grammatical and phonological errors tended to elicit recast, lexical errors tended to invite negotiation of form. The lower rate of repair after grammatical errors might be attributed to the fact that recasts were not salient enough for the young learners to draw their attention to their non-target output. Young learners might have perceived recasts as alternative or identical forms fulfilling discourse functions rather than corrective ones. Another reason might be that cognitive processing involved in accessing and applying the system-driven rules of grammar is much more complex than that involved in the retrieval of lexical items or modeling of the teachers' recasts of phonological errors. Overall, the findings of this study support the view that the negotiation of form manifested in the provision of feedback and immediate learner repair makes up a distinguishable set of moves in classroom discourse, which invites further research to determine its effect on the development of target language accuracy.

Lyster (1998b) further examined the same database to identify the natural discourse contexts in which recasts occur within classroom settings, and whether these contexts draw young learners' attention to noticing the gap between their initial incorrect utterance and the teacher's corrective reformation. The recasts were classified according to their pragmatic functions. Four types of recasts were identified: isolated declarative recasts (67%); isolated interrogative recasts (12%); incorporated declarative recasts (17%); and incorporated interrogative recasts (4%). Analysis of the data showed that recasts were mostly followed by topic continuation moves, and a minimal number of recasts resulted in students' uptake. A further analysis of the data revealed that in addition to recasts, such non-corrective repetitions performed the same pragmatic functions in classroom discourse as those recasts. This, in turn, reduced the saliency of the corrective reformulations entailed in recasts. It was further found that when teachers wanted to draw the learners' attention to form, they tended to use elicitation techniques and metalinguistic clues. In conclusion, Lyster attributed the ambiguous nature of recasts as a form of corrective feedback to the fact that both recasts and non-corrective repetition

fulfill identical functions and exist in comparable proportion in classroom discourse. It is therefore conceivable that it was difficult for the students to perceive any corrective purpose in recasts.

Long, Inagaki, and Ortega (1998) conducted two experiments to examine the relative utility of preemptive positive input (models) and reactive negative feedback (recasts) in L2 Japanese and Spanish. Both studies utilized a pretest, posttest, and control group design, where the subjects were randomly assigned to five groups. The four experimental groups were further collapsed into two groups, recasts and models. In these groups, it was ensured that both the model and recast condition involved equal input and output opportunities. The target structures in the Japanese experiment were adjective ordering, in which the subjects were presented with the *color-size-NP* construction and the locative construction. The effects of models and recasts were comparable in the adjective ordering construction, and there was almost no apparent advantage for either kind of input over the control condition with locatives. The results of this experiment, however, should be interpreted with caution. This is due to the fact that at least 50% of the participants in the treatment groups found the test instructions for eliciting the locative to be unclear. There was also another problem related to some of the participants' prior knowledge of Japanese. These two problems, therefore, might have affected results.

This second issue of prior knowledge was handled in the second experiment. In this experiment, participants who showed prior knowledge of either of the target structures on the pretest were withdrawn from the study, and replaced by new participants. For the adverb placement construction, the participants in both treatment groups outperformed the ones in the control group, and the ones in the recast treatment group scored statistically significantly higher than ones in the model treatment group. No learning of the object topicalization structure occurred, in either the experimental or the control groups. The explanation provided for this null finding is the possibility that this structure may either have been too difficult or that the instructional tasks used in the study were somehow inadequate. Despite the disappointing results of the Japanese and Spanish results, they still provide limited evidence in support of the claim that implicit negative feedback, namely recasts, play a facilitative role in L2 acquisition.

It is noteworthy that the studies reviewed so far are mainly teacher-oriented. Recently, however, researchers have been more inclined to concentrate their efforts on learners' perceptions, readiness, and responses to feedback. Mackey, Gass, and McDonough (2000) explored learners' perceptions of feedback. Their study investigated whether or not learners perceive feedback as feedback, and whether or not they recognize the target of that feedback. The study, moreover, tried to further explore the relationship between the learners' perceptions, the nature of the interactional feedback, and the linguistic target of the feedback. In addition, the study attempted to examine the relationship between learners' perceptions of feedback, and their immediate uptake of feedback during the interaction. The different types of feedback were categorized as recasts, negotiations, and combinations of both recasts and negotiation. The participants (N= 17) in this study were adult learners attending language courses at a U.S. university. There were 10 NNSs studying English (in an ESL context), and 7 NNSs studying Italian (in an IFL context).

Interestingly, it was found that the learners perceived recasts as another way to say the same thing, and not as corrective feedback. It was also found that in the feedback episodes resulting in uptake, the learners reported that they accurately perceived the target of the feedback. In the episodes where the feedback did not result in uptake, the learners did not perceive the feedback as such. The researcher also pointed out that perception does not entail L2

development. Given the small sample of the study, the results suggest a need for longitudinal studies to further investigate the relationships between different types of feedback, modified output, and L2 development.

In spite of the fact that recasts have not fared well when compared to more explicit forms of feedback in the studies reviewed so far, other studies have reported some short-term benefits for adult SLA. Mackey and Philp (1998) examined the effect of recasts on the production and the development of question forms in English as a second language. The study compared two groups of learners who received interactionally modified input with learners who received the same input containing intensive recasts. The effect of the treatment conditions on learners' IL development was assessed through examining changes in question formation. All question forms targeted in treatment and testing were part of the developmental sequence for question formation in ESL, as identified by Pienemann and Johnson (1987). The study employed a pretest-posttest control group design. Once assigned "ready" or "unready", the participants were placed randomly into groups: two interactor groups, two recast groups, and one control group. The recast groups received intensive recasts of their non target-like utterances as they carried out tasks with the NS interlocutor. The interactor groups performed the same tasks but did not receive such recasts. The control group participated in the pretest and posttest only. The control group came from the *ready* pool.

Analysis of the results reveals that learners at higher developmental levels who participated in interaction with intensive recasts showed a greater increase in structures at higher developmental levels than learners who participated in interaction without intensive recasts. It was also interesting to discover that while the two groups that received recasts were very similar in terms of their responses to recasts and in terms of the content of the recasts provided to them, one group produced developmentally more advanced questions than the other. Thus, the conclusion was that there is a need for further research to explore why some, but not all, learners use recasts, and which factor influences their use. The overall findings of the study indicate that recasts may be beneficial for short term IL development in spite of the fact that they were not always incorporated into the learners' immediate responses.

The findings of Mackey and Philp's (1998) study are particularly interesting in that they indicated that it was the developmentally *ready* learners who made the greater gains in terms of sustained increase in higher-level structures. In other words, recasts did not enable learners to acquire forms that they were not developmentally ready to acquire. This finding lends support to Pienemann and Johnson's (1987) and Pienemann, Johnson, and Brindley's (1988) fixed-stage sequence in ESL.

Doughty and Varela (1998) carried out a study in which *focus on form* was carefully operationalized as corrective recasting and implemented into a content-based ESL class in the United States. The study examined whether and how learners' attention could be drawn to formal features without diverting them from their communicative intent. The study employed a pretest-posttest control group design. The treatment group received focus on form instruction, in addition to science instruction, whereas the control group received only the science content instruction. Only errors concerning the past and conditional forms were addressed, and there was no metalinguistic discussion. The results indicated that whereas the comparison group's use of past time reference changed very little from pretest to posttest measurement, the progress made by the treatment group was much more substantial. In addition to this improvement in accuracy, there was an overall increase in the number of the attempts to express the past, as indicated by the category of emergent interlanguage, which includes both target-like and

interlanguage past-time reference. The results of this study provide evidence that the incorporation of corrective feedback was more effective than leaving students to their own devices to develop target-like ability in past-time reference.

Han (in press) conducted a small-scale experimental study to examine the impact of recasts on tense consistency in L2 output. The study utilized a pretest, posttest, delayed posttest, control group design. The experimental group received recasts as the only pedagogical tool targeting the problem of lack of tense consistency in the L2 learners' output. The control group received no pedagogical treatment. The database included written and oral narratives from both groups that were collected over the period of eleven sessions. The posttest and the delayed posttest results showed that the experimental group evidenced a much greater control of tense consistency than did the control group. In spite of the fact that this was a very small scale study (N= 8), and accompanied by all the limitations associated with classroom realities and with the generalizability of the results, the study identified four factors that make up a set of inter-dependent conditions in order for recasts to have the desired effect. The conditions were: individualized attention, consistent focus, developmental readiness, and intensity. All four together create saliency of the target feature, relevance, and reinforcement. To what extent these four conditions can be incorporated into real classrooms, and if incorporated, whether they will generate the same positive impact still remains to be explored.

In accordance with the new shift in paradigm, in which the learner's perception and developmental readiness are taken as the point of departure in giving effective corrective feedback, Han (2001) carried out a longitudinal case study concerning the differential effects of corrective feedback in the absence or presence of fine-tuned corrective feedback. Fine-tuned feedback is defined as "achieving congruence on at least two levels: 1) between the giver's intent and the receiver's interpretation; and between the information content in the correction and the receiver's readiness to process it" (Han, 2001, p. 4). The linguistic focus of the study was a Norwegian distinctive feature in which the sentence order is inverted from the canonical SVOA into the AVSO whenever the adverbial initiates the sentence. Since the teacher's corrective feedback did not trigger any change in the student's IL structure, the researcher initiated a fine-tuning process that led to IL development. The researcher continued collecting the learner's output for a period of three months after the provision of fine-tuned feedback in order to test for long-term retention. The data collected from the follow-up period confirmed that the learner was able to maintain progress.

According to Han (2001), while the fine-tuned feedback proved to be successful in this case study, there is still a need for further longitudinal and experimental studies to increase our understanding of the nature of fine-tuning and its impact on learning. Such studies should identify further strategies for providing fine-tuning. The significance of this study lies in the fact that it provides us with another condition under which corrective feedback functions effectively, i.e., the provision of fine-tuned feedback.

## DISCUSSION

Several issues that loom large in the literature call for further examination. Such issues include: the problems inherent in the provision of corrective feedback, the differential effects of various types of feedback, the conditions under which the effect of feedback can be maximized, and the issue of uptake.

## **Problems Inherent in the Provision of Corrective Feedback**

Researchers have noted problems regarding inconsistency, ambiguity, and ineffectiveness of teachers' corrections (Allwright, 1975; Chaudron, 1977; Long, 1977). They attribute the lack of efficacy of corrective feedback to the ambiguous and unsystematic approaches adopted by the majority of teachers. Teachers were found at times to accept faulty utterances for fear of interrupting the communicative flow, and at other times to correct the same faulty utterances. Teachers were also found to provide contradictory comments on written production and to make arbitrary corrections (Zamel, 1985).

In addition to these problems are those that originate from the identical functions that very similar structures perform in classroom discourse; namely, recasts, and corrective and non-corrective repetitions (Chaudron, 1988; Lyster, 1998a, 1998b, 2001; Lyster & Ranta, 1997). That is to say, recasts and corrective and non-corrective repetitions have been found to be used to keep the students' attention focused on content rather than on form. Added to this is the fact that they all existed in almost equal proportion. Such similarities in function and proportion reduce the saliency of the corrective reformulations entailed in recasts and corrective repetitions. Thus, for L2 learners whose grammar still needs to encompass the target rule, the correction is more often than not imperceptible, or perceived as merely an alternative to their own utterance.

## **The Differential Effects of Various Types of Feedback**

Traditionally, corrective feedback strategies have not been viewed as equally effective. A closer look at the studies reviewed so far reveals that techniques that require reformulation, such as clarification requests and comprehension checks, have been more effective than those which do not, namely recasts (Long, Inagaki, & Ortega, 1998; Lyster, 2001, 1998a, 1998b; Lyster & Ranta, 1997). While the Doughty and Varela study (1998) indicates that recasts are beneficial for IL development, it does not provide evidence that recasts alone have that positive effect. As determined in the Doughty and Varela study, recasts, always delivered with falling intonation, were preceded by repetition of the learner's error with rising intonation. Such a combination of recasts and paralinguistic signals increased the saliency of recasts and, consequently, their impact was much more apparent than had been previously detected. In other studies (Lightbown & Spada, 1990; Tomasello & Herron, 1988, 1989; White, 1991), it also has been found that corrective feedback was most effective when accompanied by metalinguistic clues.

Chaudron (1988), moreover, pointed out the fact that in order for corrective feedback to bring about its desired effect, corrections must be kept clear and consistent within a focused domain the types of error. This view echoes Fanselow's (1977) earlier recommendations for providing effective feedback: isolating the error and giving explicit information. More recently, Seedhouse (1997) has recommended direct and overt correct feedback. Chaudron (1988) emphasized that feedback that elicits self-correction is more likely to improve learners' ability to monitor their own utterances. Corder (1967), earlier still, advocated the position that forcing learners to rely on their own resources was more beneficial than simply providing them with the correct form. In fact, the majority of earlier studies of error treatment (Allwright, 1975; Corder, 1967; Hendrickson, 1978; Vigil & Oller, 1976) recommended pushing learners in their output

rather than simply providing them with the correct form. According to those studies, providing the learners with time and opportunity for self-repair clearly benefits L2 development. Swain (1985), Pica (1988) and Pica, Holliday, Lewis, and Morgenhaler (1989) share this opinion: Corrective techniques, such as clarification requests, elicitation, and confirmation checks, that lead to modified output and self-repair are more likely to improve learners' ability to monitor their output and lead to IL development.

## **Conditions Determining the Efficacy of Corrective Feedback**

One of the most significant issues raised in the literature concerns the conditions under which corrective feedback functions most effectively. Tomasello and Herron (1988, 1989) provided us with the Garden Path technique. However, there is no clear evidence concerning the generality of the effectiveness of this technique. The range of situations and structures in which this technique would be most effective is still undecided.

Han's (2001; in press) studies, furthermore, summarized an additional set of conditions. The first of these conditions is the fine-tuning of feedback, i.e., the achievement of congruence at the level of the speaker's intent and the receiver's interpretation, as well as the information content in the correction and the listener's receptiveness in processing it (Han, 2001). Such a condition provides evidence for long-term effects. In addition to the fine-tuning of feedback, Han (in press) identified four other conditions necessary for recasts to be successful. These conditions are: individualized attention to the learners; consistent focus upon one type of error at a time over a period of time; intensity of the treatment; and the learners' developmental readiness. This last condition is significant in that it ties research on the effect of corrective feedback on SLA to research on teachability and developmental sequences (Corder, 1967; Han, in press; Mackey & Philp, 1998; Pienemann & Johnson, 1987; Pienemann, Johnson, & Brindley, 1988).

According to this view of learning, learners can acquire some features of the language successfully at different points in their development, while other features can only be acquired according to a built-in syllabus, or internal schedule. The recommendation then is to evaluate the learners' developmental stage and teach what is appropriate for that stage. It can be seen that both lines of research—the research on developmental readiness, and that on the role of corrective feedback in SLA—suggest that the learners need to be at the appropriate developmental level to process feedback and acquire the new structure.

## **Uptake**

The effectiveness of different types of feedback is determined by whether or not a technique results in uptake, and if does, by whether it results in successful repair. According to Chaudron (1977), "the main immediate measurement of effectiveness of any type of corrective reaction would be a frequency-of-count of the students' correct responses following each type" (p. 440). For Slimani (1992), uptake refers to what the learners report having learned from a particular lesson. Lyster and Ranta (1997), in addition, define uptake as "a student's utterance that immediately follows the teacher's feedback" (p. 49). In this framework, uptake comprises "a reaction in some way to the teacher's intention to draw the learner's attention to some aspect

of the student's initial utterance" (p. 49). In this model, uptake is divided into uptake that results in repair of the error which was the focus of the feedback, and uptake that results in utterances that still need repair.

In spite of the fact that learner uptake that results in student-generated repair has been prioritized as evidence of L2 learning, this approach is problematic. This is due to the fact that although uptake is indeed indicative of the learner's response to corrective feedback, it is in no way the only means by which learners may respond, even if they perceived the intent of the given feedback. According to Schachter (1983), neither the use of alternative forms following feedback nor the imitations of corrective feedback may be provided to them. Long (1977), moreover, cautioned against confusing the immediate impact of corrective feedback on monitored linguistic performance with permanent success in modifying the learner's interlanguage rule so that the error is eliminated from future production. In addition, the absence of an overt response does not indicate lack of L2 learning. By the same token, the presence of uptake cannot be attributed to that particular episode of corrective feedback. It should be noted that corrective feedback is part of each learner's history, and while it might result in immediate evidence of development, it might also become evident later in the course of L2 development (Ohta, 2001).

Doughty and Williams (1998) point out that the effects of corrective feedback are almost always "gradual and cumulative rather than instantaneous and categorical" (p. 40). Lyster and Ranta (1997) highlight the complexity of the processes involved in L2 learning. Given the slow, non-linear, and partial nature of many of the processes involved in SLA, it would be naïve to reduce evidence of L2 learning to a learner's immediate response to corrective feedback. Researchers have, therefore, stressed that uptake, whether reformulation or repetition, is not necessarily an indication that feedback had a positive effect on IL development, nor is its existence the sole evidence for learning (Corder, 1967; Ellis, Basturkmen, & Loewen, 2001; Long, 1977; Lyster & Ranta, 1997; Mackey & Philp, 1998; Oliver, 1995; Schachter, 1983). In order to capture the complexities of the processes involved in SLA, future studies should therefore be longitudinal in nature in order to allow for longer periods of exposure than has been the case to date.

In summary, it seems that in order for corrective feedback to bring about IL development, certain conditions have to be met. First, teachers need to be systematic and consistent in their provision of feedback. Second, the corrective feedback provided should be clear enough to be perceived as such. Third, the techniques employed should allow for time and opportunity for self- and peer-repair and modified output. Fourth, the feedback should be fine-tuned in the sense that there should be as close a match as possible between the teacher's intent, the targeted error, and the learner's perception of the given feedback. Fifth, the feedback provided should focus on one error at a time, over a period of time, i.e., the feedback provided should be consistent and intensive in nature. Finally, the learner's developmental readiness to process the feedback provided should be taken into consideration.

## CONCLUSION

As this literature review demonstrates, researchers investigating the role of corrective feedback in SLA have made remarkable progress in the last two decades, particularly in the 90s. As progress is made, and as the questions become more complex, more sophisticated methods will need to be developed. Nonetheless, research on the impact of correct feedback on SLA development has been dynamic and continues to grow. In an area of research as diverse and as significant as that of corrective feedback, no single literature can cover all aspects of all the issues involved. This paper is an attempt to provide an accurate and comprehensive overview of the central issues as determined by the most prominent scholars and researchers in the field.

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