Issues of Corrective Feedback in Second Language Acquisition

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ABSTRACT

For decades now, questions about the role of corrective feedback in second language acquisition (SLA) have been hotly debated, spawning a great deal of theoretical and empirical research. Although the facilitative role of corrective feedback in SLA has received some empirical support, the claims regarding its impact on SLA have yet to be fully or decisively substantiated. In order to move this line of research forward, it is important to examine the issues arising in the SLA literature. To this end, this paper aims to review and discuss the literature throwing light on three major issues: (1) learners' noticing of feedback, (2) potential mismatches between teachers' intentions and learners' interpretations, and (3) the role of different types of implicit corrective feedback.

INTRODUCTION

Second language (L2) learners can be exposed to two types of input: positive evidence and negative evidence (Long, 1996). Positive evidence provides learners with models of what is acceptable in L2, either as authentic native speaker (NS) discourse or in modified language which simplifies or elaborates the input to facilitate learner comprehension. By contrast, negative evidence provides learners with information as to what is unacceptable in L2. Such information can be conveyed before incorrect use occurs through rule presentation – a preemptive strategy – or afterwards to indicate and/or correct non-targetlike forms in learner output – a reactive strategy (Long & Robinson, 1998).

In the second language acquisition (SLA) literature, the term *negative evidence* is often used interchangeably with the terms *negative feedback* and *corrective feedback* to refer to any indications of learners' non-targetlike use of the target language³ (Gass, 1997; Schachter, 1991).

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² Input can be syntactically or semantically simplified. Syntactic simplification refers to the use of simple sentence structures rather than complex sentences; semantic simplification refers to the use of restricted vocabulary (e.g., avoiding idiomatic expressions and low frequency lexical items).

³ Although these three terms are used interchangeably in the SLA literature, subtle differences distinguish them. Negative evidence implies a piece of information usable from the learner's perspective; negative feedback and corrective feedback imply external information provided by the givers of feedback. Thus, whether corrective feedback and negative feedback can be used as negative evidence depends upon the learner. For the sake of convenience, the term *corrective feedback* is mainly used in this paper.

Such indications can be conveyed *implicitly* or *explicitly*. Explicit corrective feedback⁴ provides learners with a meta-linguistic explanation or overt error correction. On the other hand, implicit corrective feedback⁵ indirectly and incidentally informs learners of their non-targetlike use of certain linguistic features. In this case, since the correction is unobtrusively provided so as not to interrupt the flow of the conversation, ungrammaticality is expected to be inferred. Recasts,⁶ confirmation checks, clarification requests, repetitions, and even paralinguistic signs such as facial expressions can all constitute implicit corrective feedback (Long, 1996).

For decades now, on the theoretical front, the appraisal of the role of corrective feedback in SLA has been mixed. Those advocating the nativist theory believe that language acquisition is made possible by Universal Grammar (UG), "the system of principles, conditions, and rules that are elements or properties of all human language" (Chomsky, 1975, p. 29). They claim that the formation and restructuring of second language grammars is solely attributable to this innate human linguistic mechanism, working in tandem with positive evidence (Cook, 1991; Schwartz, 1993). Accordingly, in this view, negative feedback has little impact on language learning, merely affecting performance but not leading to change in underlying competence (Schwartz, 1993).

Krashen (1982, 1985), in his Input Hypothesis, also denies any discernable effects of corrective feedback on SLA. He asserts that "the only causative variable in SLA" is comprehensible input (Krashen, 1982, p. 21), language structures that are one step beyond the learner's current stage of interlanguage (IL) development. He also considers SLA a subconscious process operating in tandem with the reception of comprehensible input. Following this line of thinking, he argues that any knowledge consciously learned through explicit instruction, including negative evidence, cannot have an impact on L2 acquisition.⁷

Nativists such as Krashen have dismissed any perceived benefits from corrective feedback based on their belief that prolonged exposure to positive evidence (comprehensible positive input for Krashen) is the driving force behind SLA. Krashen even believes that corrective feedback is not only useless but also potentially harmful, since it interrupts the flow of discourse that could provide comprehensible input. However, these contentions have been challenged by both theoretical and empirical research which reveal that L2 learning cannot be effected by exposure to positive input alone, even if the input is comprehensible (e.g., Bley-Vroman, 1989; Harley, 1988; Swain, 1985).

Swain's (1985, 1995) Output Hypothesis, for example, contends that comprehensible input is necessary but not sufficient for learners' L2 development, stating the importance of output opportunities in L2 development. Her claims stem from a number of studies on French Immersion (Harley, 1988; Swain, 1985) where learners received plenty of comprehensible input, but still showed far from native-like performance. Such findings, furthermore, led her to identify three different roles for output: (1) it may help learners notice a gap between what they want to say and what they can say (Izumi & Bigelow, 2000; Swain & Lapkin, 1995), (2) it can provide

⁴ An example of explicit corrective feedback: A: I seed the girl. B: No, we say, "I saw the girl."

⁵ An example of implicit corrective feedback: A: I seed the girl. B: What?

⁶ Long (1996) defines *recasts* as "utterances that rephrase a child's utterance by changing one or more sentence components (subjects, verb, or object) while still referring to its central meanings" (p. 434). (e.g., A: The boy *have* a ball. B: Yes, the boy *has* a ball.)

⁷ Krashen differentiates between acquired knowledge and learned knowledge: the former is a subconscious process and the latter is a conscious product. Through the acquisition process, learners are able to produce a second language (i.e., acquired competence); through the learning process, learners come to know the rules of a second language. According to him, knowledge attained through learning cannot be internalized as acquisition.

learners with a means by which they can test hypotheses about linguistic correctness, and (3) it may help learners to develop metalinguistic knowledge of how the L2 works (Kowail & Swain, 1994). Swain also attributes considerable importance to corrective feedback, in effect blaming the deficiencies in learner performance on its absence in the immersion classrooms.

The data from the French Immersion classrooms also provide an explanation of why learners need to attend to meaning as well as linguistic aspects which otherwise may go unnoticed, unprocessed, and unlearned. In his Noticing Hypothesis, Schmidt (1990, 1995, 2001) argues that noticing is requisite for learning, stating that learners must consciously pay attention to or notice input in order for L2 learning to proceed. Such assertion is based on his diary study of the acquisition of 21 verbal constructions in Portuguese, which found that consciously noticed features by the learner were processed on a level leading to eventual production by the learner (Schmidt & Frota, 1986). Those subscribing to the Noticing Hypothesis (Ellis, 1991; Gass & Varonis, 1994; Schmidt, 1990, 1995, 2001) also recognize the value of corrective feedback, assigning it a facilitative role in drawing learner attention to form. From this perspective, corrective feedback serves as a stimulus for noticing because such feedback triggers learners to recognize the gap between their IL and the target norm – this process in turn leads to subsequent grammatical restructuring.

Similarly, Long (1996), in his updated Interaction Hypothesis, suggests the beneficial role of corrective feedback. He claims that it provides not only direct and indirect information about what is grammatical but also additional positive evidence which may otherwise be absent in the input. According to him, "negotiation for meaning, and especially negotiation work that triggers *interactional* adjustments by the NS or more competent interlocutor" facilitates L2 development since it "connects input, internal learner capacities, particularly selective attention, and output in productive ways" (Long, 1996, pp. 451-452).

The debate between the nativists and their detractors has spawned a great deal of theoretical and empirical research (e.g., Brock, Crookes, Day, & Long, 1986; Carroll, Roberge, & Swain, 1992; Carroll & Swain, 1993; Chun, Day, Chenoweth, & Luppescu, 1982; Long, Inagaki, & Ortega, 1998; Oliver, 1995, 2000) and opened a variety of discussions. Recently, L2 researchers have attempted to investigate the impact of corrective feedback on L2 development from various angles. Such diverse approaches have raised a variety of issues related to learners' noticing (e.g., Doughty, 2001; Doughty & Varela, 1998; Lyster & Ranta, 1997; Mackey, Gass, & McDonough, 2000; Philp, 2003; Roberts, 1995), learners' developmental readiness (e.g., Mackey & Philp, 1998; Philp, 2003; Spada & Lightbown, 1993), individual differences (e.g., Mackey, Philp, Egi, Fuji, & Tatsumi, 2002), and so forth.

In order to make claims regarding the role of corrective feedback in L2 acquisition, it is important to clarify its nature and value by examining issues arising from both theoretical and empirical research. To this end, in this paper, I will review the literature throwing light on three major issues: (1) learners' noticing of corrective feedback, (2) mismatches between teachers' intentions and learners' interpretations, and (3) the roles of different types of implicit corrective feedback in SLA. First, I will begin with a review of first language (L1) and L2 studies based on Pinker's (1989) four criteria for confirming a role for corrective feedback in language acquisition (i.e., the existence, usefulness, usability, and necessity of negative evidence). Then, I will turn to the three issues mentioned above, discussing each with evidence from both theoretical and empirical research. Finally, I will conclude this paper with a recapitulation of the issues discussed, and suggest some directions for future studies.

CORRECTIVE FEEDBACK IN FIRST AND SECOND LANGUAGE ACQUISITION

Those who promote the efficacy of corrective feedback in SLA have been called upon to prove that corrective feedback (1) exists, (2) is usable, (3) is used, and (4) is necessary (Pinker, 1989) prior to discussing the contribution corrective feedback can make to language acquisition. Thus, many studies on the role of corrective feedback (e.g., Farrar, 1990; 1992; Oliver, 1995, 2000) have been couched in these requirements. As more argumentation has been raised in this regard in L1 than in L2 acquisition, and L2 research draws heavily on the L1 studies, some L1 studies which have been found to meet these four criteria will be briefly reviewed first.

Corrective Feedback in L1 Acquisition

L1 acquisition researchers have investigated how caretakers interact with children to explore the potential effect of corrective feedback. In an early study in this vein, Brown and Hanlon (1970) reported that parents rarely provided explicit corrective feedback on children's ill-formed utterances. Other studies (e.g., Demetras, Post, & Snow, 1986; Hirsh-Pasek, Treiman, & Schneiderman, 1984) also showed that there was no differential parental response following ungrammatical or grammatical utterances. Instead, corrective comments were likely to take place based on the truth-value of the child's utterances.⁸

Unlike the findings above, in another study on caretaker-child conversation, Bohannon and Stanowicz (1988) found that "adults responded differentially to children's well- and ill-formed speech in their use of repetitions and clarification questions." (p. 687). Children received some form of differential feedback (e.g., recasts, expansions, and non-repetitious clarification questions) to their syntactic errors (34%), and to their mispronunciation (35%), as opposed to only 14% of such responses for well-formed speech. Similarly, Farrar (1992) found that parents did provide corrective recast on children's ungrammatical utterances. These findings lend some support for the *existence* of negative evidence in L1 input.

Furthermore, Farrar (1992) reported that 23-month old children were two to three times more willing to "imitate the grammatical morphemes contained in corrective recasts than imitate the identical information contained in the other discourse categories" (p. 95). This finding was corroborated by Saxton's (1997) experimental study revealing that children (mean age 5) were far more likely to reproduce a correct irregular past tense form when it was presented in the form of negative evidence, rather than positive evidence. These findings lead to the interpretation that the children noticed the feedback and perceived it as commentary on incorrect forms. Also, the findings may serve as evidence that corrective feedback is usable and used (i.e., Pinker's second and third criteria). More robust evidence bolstering the satisfaction of these criteria was explored in other studies (Farrar, 1990; Nelson, 1991; Nelson, Denninger, Bonvillian, Kaplan, & Baker, 1984) which showed that the children who received negative feedback following their ungrammatical utterances outperformed those who received the same amount of input in the form of models (i.e., positive evidence).

⁸ All through the 70s and 80s, it was assumed that corrective feedback was useless for very young language learners who had not reached any kind of metalinguistic awareness.

The aforementioned studies suggest that children may make use of the negative and specific evidence provided to them, satisfying Pinker's (1989) first, second, and third requirements. However, empirical support for a role for negative feedback in L1 acquisition is far from sufficient. As Long (1996) pointed out in his review of L1 studies on negative evidence, we still need more studies which show specific effects of negative evidence over time on the items it targets (e.g., Baker & Nelson, 1984; Farrar, 1990) to substantiate its role in L1 acquisition. Nevertheless, the studies which show the positive impact of negative evidence on L1 acquisition shed light on its facilitative role, although these findings are inadequate as proof for the necessity of negative evidence in L1 acquisition (Long, 1996).

Corrective Feedback in L2 Acquisition

Early studies on corrective feedback in L2 acquisition cast doubt on its existence, use, and usability (e.g., Brock et al., 1986; Chaudron, 1977, 1986; Chun et al., 1982; Day, Chenoweth, Chun, & Luppescu, 1984). For example, in an investigation of adult native speaker-nonnative speaker (NS-NNS) noninstructional conversations, Chun et al. (1982) found that only 8.9% of NNS erroneous utterances were responded to with some form of corrective feedback, thereby suggesting that corrective feedback rarely occurred. The analyses of the same data by Brock et al. (1986) also showed few effects of this feedback on the NNS subsequent output despite an expanded definition of "feedback" to include implicit feedback on errors which had not been counted in Chun et al.'s study. Likewise, Chaudron (1988), based on his review of studies (e.g., Chaudron, 1986; Fanselow, 1977) investigating teachers' corrective feedback in classrooms, reported that feedback was provided erratically and often went unnoticed by students.

Recently, however, positive results for its existence, use, and usability have been reported (e.g., Carroll et al. 1992; Carroll & Swain, 1993; Ellis, Basturkmen, & Loewen, 2001; Long et al., 1998; Oliver, 1995, 2000; Spada & Lightbown, 1993). Oliver (1995), for instance, examined whether or not NS children provided negative feedback to NNS conversational partners. She reported that "in 61% of instances, NSs responded to NNS error turns with negative feedback, ... whereas they ignored errors only 39% of the time" (p. 473). In one of her more recent studies, Oliver (2000) compared the availability and use of negative feedback in both teacher-fronted classrooms (10 adult ESL classes and 10 child ESL classes) and peer-pairwork settings (16 adult NNS-NS dyads and 16 child NNS-NS dyads). She found that a substantial proportion of nontargetlike turns by learners received corrective feedback in both settings for both ages (adults: 47%; children: 40%). The results showed that feedback was frequently and consistently provided and incorporated into the learners' subsequent output as well. All these results provide supportive evidence that not only does corrective feedback exist but also that learners make use of the feedback in their subsequent interlanguage production. These findings may satisfy Pinker's first, second, and third criteria (i.e., existence, usability, and use).

However, it should be noted that, in most studies, the use and usability of corrective feedback have only been assessed in terms of the learners' immediate responses to the feedback (e.g., Ellis et al., 2001; Morris, 2002; Oliver, 1995, 2000). The learner's ensuing response to feedback cannot be equated with the ultimate use of the feedback in L2 development as it may merely show a subsequent and temporary change of linguistic behavior at the moment the feedback is received. Thus, more studies which demonstrate long-lasting effects of corrective feedback on L2 development are needed to provide supportive evidence for its use and usability

(e.g., Doughty & Varela, 1998; Han, 2001, 2002b; Mackey & Philp, 1998). This lack of general evidence with respect to the use and usability of corrective feedback subsequently raises the question about its necessity in L2 development, although its facilitative role in IL development has evidenced some support in some SLA literature (e.g., Doughty & Varela, 1998; Lightbown & Spada, 1990; Long et al., 1998).

ISSUES OF CORRECTIVE FEEDBACK IN SLA

Issue 1: Learners' Noticing of Corrective Feedback

Noticing⁹ has been considered a means whereby learners take control over the information (input) received. This function has been deemed critical by some theorists based on the assumption that only noticed input can be converted into intake. Corder (1967), for example, proposes that intake is *what is available* within input and what learners attend to, hypothesizing that only attended-to information could serve as a basis for language learning. More recently, such ideas have become associated with Schmidt's Noticing Hypothesis¹⁰ (1990, 1995, 2001). He contends that "subliminal language learning is impossible" (p. 149) and only what is consciously noticed can be converted into intake. ¹¹ Gass (1991) also asserts that input can only be available for intake into a language learner's existing conceptual system when it is consciously noticed.

As a conscious process, noticing may enable learners to carry out a comparison of what they have heard in the input and what they can actually produce on the basis of their current interlanguage systems: this process is known as *noticing the gap* (Schmidt & Frota, 1986). Noticing the gap has been considered an essential step of SLA: noticed discrepancies can prompt IL restructuring by kicking off a process of comparison and integration (e.g., Ellis, 1991; Gass, 1991, 1997; Gass & Varonis, 1994; Long, 1996). However, the questions of precisely (1) how feedback helps learners notice the gap and (2) to what extent its degree of explicitness can influence its effectiveness, remain unclear (e.g., Chaudron, 1977; Lyster, 1998a; 1998b; Lyster & Ranta, 1997). The following sections discuss studies focusing on these issues.

Corrective Feedback as a Trigger for Learners' Noticing of Gaps

Whereas explicit corrective feedback can prompt learners to notice the gap by directly and overtly drawing their attention to the incorrect form they have made, implicit corrective feedback (e.g., confirmation checks, clarification requests, and recasts) aims at inducing learners to detect the disparity between their IL and the TL. For implicit corrective feedback, one fundamental question arises: How do such indirect signals help learners recognize the

⁹ *Noticing* has been described as the part of the attentional system which includes the detection and consequent registration of stimuli in memory (Robinson, 1995; Schmidt, 2001; Tomlin & Villa, 1994).

¹⁰ Schmidt (1990, 1995, 2001) operationalized noticing as subjective experience and one's ability to report such experience. Thus, from his point of view, noticing entails a certain level of awareness, and such awareness is necessary for language learning to take place. Also, noticing is identified as being nearly isomorphic with attention in that both noticing and attention involve awareness.

¹¹ *Input* refers to any target language available to the learner, whereas *intake* refers to the subset of input which is actually utilized in some way by the learner (Corder, 1967).

discrepancies? Two hypotheses have been articulated to answer this question: (1) implicit feedback offers *contrastive evidence* for learners and (2) the *output* driven by the feedback can stimulate learners to notice the gap.

The first hypothesis proposes that providing the opportunity to identify contrasts between correct forms (i.e., models) and incorrect forms through implicit corrective feedback (i.e., recasts) may promote learners to notice the gap between their IL and the TL (e.g., Long, 1996; Long & Robinson, 1998; Mackey & Philp, 1998; Oliver, 1995; Saxton, 1997). The theoretical background of this assumption is in line with the Direct Contrast Hypothesis (Saxton, 1997) in L1 acquisition:

When the child produces an utterance containing an erroneous form, which is responded to immediately with an utterance containing the correct adult alternative to the erroneous form (i.e., when negative evidence is supplied), then the child may perceive the adult form as being in CONTRAST with the equivalent child form. Cognizance of a relevant contrast can then form the basis for perceiving the adult form as a correct alternative to the child form. (p. 155)

The above hypothesis is congruent with Long's (forthcoming) accounts of how recasts can attract the learner's attention and bring a greater advantage for learners than positive evidence does: "the contingency of recasts on deviant learner output means that incorrect and correct utterances are juxtaposed. This allows the learner to compare the two forms side by side, so to speak, and to observe the contrast, an opportunity not presented by non-contingent utterances, i.e., models" (p. 4). That is to say, although both recasts and positive evidence present the target models, the models in the form of recasts are more salient since the juxtaposition of two utterances (i.e., incorrect and correct utterances) can highlight the different elements more effectively. The enhanced salience leads the learner to compare the target form with the erroneous utterance, which may eventually promote him to reject the latter in favor of the former.

The Direct Contrast Hypothesis and Long's claim have been supported by some L1 studies (e.g., Farrar, 1992; Saxton, 1997) which found children more willing to reproduce the target linguistic features¹² following corrective feedback than when only positive evidence was provided. Parallel findings have also been reported in L2 studies which have explored the relative efficacy of recasts over positive evidence (e.g., Iwashita, 2003; Long et al., 1998).

Long et al. (1998) conducted two experimental studies to explore the relative utility of preemptive positive input (models) and recasts in L2 Japanese and Spanish. In the study of L2 Japanese, the researchers failed to find any advantage for recasts over models. However, in the study on L2 Spanish, it was found that the learners in the recast group showed more statistically significant improvement on adverb placement than those in the model group. More recently, Iwashita (2003) found very similar results. She carried out an investigation on the role of task-based conversation in the acquisition of Japanese, particularly focusing on the short-term effects of recasts and positive evidence. In her study, only learners who had an above-average score on a pretest benefited from positive evidence, ¹³ which was provided 10 times more frequently than

¹² In Farrar's (1992) study, seven grammatical morphemes were chosen: plurals, present progressives, third person regular, regular past tense, 'be' copulas, auxiliaries, and articles. Saxton (1997) aimed to examine the immediate effects of negative evidence on the acquisition of six novel irregular past tense forms.

¹³ Iwashita (2003) categorized positive evidence into three types: (a) completion model – an interactional move that completed the NNS's incomplete utterance, (b) translation model – an interactional move that was provided in

recasts. On the other hand, regardless of the learners' current mastery of the target structures (i.e., locative-initial construction and verb morpheme), recasts had beneficial effects on short-term development of these features. This result corroborated Long's findings for the advantage of recasts over positive evidence thereby suggesting the potential role of recasts in prodding learners to make a comparison between correct and incorrect forms.

The second hypothesis is concerned with output: learners' attempts to reformulate their initial utterances may lead them to notice the gap between their IL and the TL. This expectation stems from the noticing function of output, as postulated by Swain (1995). Also, some empirical studies have evidenced a facilitative role for *pushed output* driven by implicit corrective feedback in the form of clarification requests. Pica, Holliday, Lewis, and Morganthaler (1989) found that learners were more likely to modify their output by making it more grammatical in response to clarification requests. Similarly, in a small-scale study by Nobuyoshi and Ellis (1993), the learners who were pushed to modify their errors on past-tense by means of requests for clarifications subsequently used the target form (i.e., past-tense) accurately and, in a post-test, outperformed the learners who were not pushed to reformulate their errors. Thus, these findings indirectly indicate that learners' efforts to modify/reproduce their initial ill-formed utterances may prompt them to notice the discrepancy between their IL grammars and the TL norms.

As discussed above, theoretical and empirical studies lend some support for the function of corrective feedback as a trigger for learners to notice the gap. Such evidence, however, still falls short of identifying a stimulus for learners' noticing. More specifically, despite the fact that the noticing function of output has been discussed at a theoretical level, little empirical research has been conducted so far to prove it (Izumi & Bigelow, 2000). Given the fact that the evidence concerning the noticing function of output is still inconclusive, it is consequently unclear whether learners' pushed output is in fact a decisive factor which stimulates them to notice the gap, or whether the provision of feedback alone fulfills that function. In addition, the main source of the benefits afforded by recasts has been questioned in some SLA literature. Leeman (2003), for instance, challenges the role of recasts as negative feedback *per se*, stating that recasts have an impact on L2 development not because of negative evidence but because of *enhanced salience*.

In addition, owing to its widespread use in NS-NNS dyads and classroom interaction, implicit corrective feedback has been extensively examined in the SLA literature. Contrary to what some of the above researchers have said, others have disputed the beneficial role of corrective feedback in SLA¹⁴ (e.g., Chaudron, 1977, 1988; Seedhouse, 1997), claiming that implicit feedback may not be an effective way to draw learners' attention to the gap because of its inherent indirectness. The potential problem caused by such implicitness will be discussed in depth in the following section.

response to a NNS's request for a model by using an L1 word or in response to a NNS's use of L1 words, and (c) simple model – an interactional move that continues a NNS's targetlike utterance

¹⁴ The reported benefits may be related to the context in which the data were collected (i.e., laboratory settings). Procedures in laboratory settings may have drawn the learners' attention to the targeted forms although they were engaged in communicative tasks. This attention to linguistic features may be less likely in meaning-based classrooms (e.g., Nicholas, Lightbown, & Spada, 2001).

Learners' Noticing and the Extent of Explicitness of Corrective Feedback

The level of explicitness of corrective feedback has been discussed pertaining to learners' attention to the feedback. Owing to its inherent indirectness, implicit corrective feedback has been considered less effective than explicit corrective feedback to attract learners' attention. Seedhouse (1997), for example, reported that teachers were unwilling to tell learners directly when they made an error, and this eventually confused the learners as to when they were being corrected. He suggested the provision of more direct and overt corrective feedback in order to benefit the learner. Earlier studies (e.g., Chaudron, 1977; Fanselow, 1977) on corrective discourse in L2 classrooms similarly pointed out potential ambiguities caused by the indirectness inherent in the functional properties of implicit corrective feedback. For instance, according to Chaudron (1988), repetitions, one of the most common types of implicit feedback, produced ambiguity since they could be understood as having "either a negative (correcting) or a positive nature (agreeing, appreciating, understanding)" (p.145).

Carroll and Swain (1993), moreover, provided empirical evidence on the advantage of explicit over implicit corrective feedback. They explored the relative effects of different types of negative feedback on the acquisition of English dative alternation. The results showed that the treatment groups which were provided with corrective feedback generally outperformed the comparison group both on an immediate posttest and on a delayed posttest administrated a week later. Among the treatment groups, the group which received the most explicit corrective feedback outperformed other treatment groups. ¹⁵ Carroll and Swain reasoned that explicit feedback might have been of more benefit because it identified the precise location and nature of erroneous performance, while implicit negative feedback required the learners to engage in a good deal of mental guesswork.

The aforementioned studies suggest that corrective feedback needs to be explicit enough for learners to notice it as correction without any ambiguities. However, there is an argument against such a standpoint: explicit corrective feedback may interrupt learners' form-meaning mapping. Doughty (2001), for example, reports that "cognitive intrusion would be welcome if the 'intruding' element were cleverly introduced by the teacher to attract any available learner roving attention" (p. 239), while the interruption that diverts learner focal attention to form may prevent them from effective form-function mapping. Long (1991) and Long and Robinson (1998) also suggest reactive and unplanned focus on form that leads to learners' incidental attention to certain linguistic features. In short, it has been suggested that the interruption should be unobtrusive, attracting roving attention to form while leaving focal attention for processing meaning. Furthermore, Long (forthcoming) cautions that learners' overt attention to forms driven by explicit corrective feedback may hinder the flow of communication in content- and meaning-based L2 classrooms.

Considering the potential interruption caused by explicit corrective feedback, the focus of discussion to be developed here is on exploring the conditions conducive to learners' noticing of

¹⁵ There are three methodological aspects which make generalization of the results problematic. First and foremost, the period between two posttests was short (i.e., one week). Thus, the study did not provide any evidence for long-term retention. Secondly, there was no variety of performance tasks. Therefore, whether the learners would generalize their learning to other types of tasks (e.g., acceptability judgment tasks, spontaneous oral production tasks) is questionable. Finally, there was no time limit for the feedback provided. Thus, the amount of feedback the learners received may have affected their performance.

the didactic purposes of implicit corrective feedback. To do this, first, some L2 research on implicit corrective feedback is reviewed.

Lyster and Ranta (1997), based on their observation of the feedback behavior of four teachers and the subsequent learner uptake¹⁶ in French immersion classrooms, pointed out the problem of ambiguity caused by implicit corrective feedback in the form of recasts. They reported that while recasts were most frequently provided (55%) by the teachers, they elicited the lowest rate of learner uptake (31%), and only led to 18% of repair. Lyster (1998a), in a further analysis of this data, found that "three quarters of the teachers' recasts were used in the same ways as *noncorrective repetition*¹⁷ [emphasis added]" (p. 74). This indicated that the teachers did not consistently use recasts for corrective purposes. Consequently, the recasts the students received may have been too ambiguous to be recognized as correction of form rather than of meaning. Likewise, Panova and Lyster (2002) found very similar results in their observational study on student and teacher interactions in adult communicative ESL classrooms.

In contrast, Ellis et al. (2001) reported a high level of learner uptake (71.6%) after the provision of teachers' recasts on the basis of data from adult ESL communicative classroom observation. The question that arises then is: What brought about this apparently opposite outcome? As noted by the researchers, the classes they observed had two parts: focus-on-forms instruction and meaning-focused activities. Their data was from the observation of the second part where the instruction was considered to be primarily communicative in that there was no predetermined linguistic focus. As they discerned, however, it was possible that "the first part of the lesson helped to foster a *general* mindset to attend to form in the second part" (p. 293). In other words, the focus-on-forms instruction may have promoted the students to recognize the didactic purpose of recasts, which may have reduced the ambiguity otherwise inherent in them.

In a similar vein, Doughty and Varela (1998) showed that the potential ambiguity of recasts can be reduced by providing learners with *corrective recasting* that encourages attentional focus. Their corrective recasting consisted of two phases: (1) "repetition to draw attention followed by (2) recasts to provide the contrastive L2 forms" (pp. 123-124). Thirty-four intermediate ESL students from two different science classes (21 in an experimental group; 13 in a control group) participated in the study. During six weeks, the experimental groups received corrective recasting on their errors on past time reference (simple past and past conditional) within the science content instruction, and the control group only received science content instruction. The experimental group showed large and statistically significant improvement on both oral and written posttests and such linguistic gains were maintained in a delayed posttest (two months later). On the other hand, the control group did not show any significant improvement.

In this study, the recasting technique involved an initial *attention-getting* phase. In this phase, the teacher repeated the learners' errors with a clear signal of rising intonation to indicate a problem with their utterances. This technique might have facilitated their recognition of recasts as corrections of their ill-formed utterances, which eventually contributed to their IL development. Furthermore, Doughty (2001) explained that the teacher in Doughty and Varela (1998) always provided the students with opportunities to repair their errors, but if they did not, the teacher *consistently* gave the targeted reformulation. Also, the teacher targeted a limited

¹⁶ In the study, *uptake* refers to a student's utterance that immediately follows a teacher' feedback.

¹⁷ *Noncorrective repetition* refers to "ways that kept learners' attention focused on content by primarily providing confirmation or additional information related to the students' message and, to a lesser degree, by seeking confirmation or additional information related to the student's message" (Lyster, 1998a, p. 74).

number of linguistic features and provided *intensive* recasts. More importantly, this kind of consistent, intensive, and *focused recasting* (corrective recasting) was provided to the students in a science class that met daily for about one hour over a period of six weeks.

Likewise, Han (2002b) found a decisive and positive role of recasts in L2 development when they were provided with *consistency* and *intensity*. She sought to examine the role of recasts both in facilitating the improvement of linguistic forms in the process of being proceduralized – tense consistency – and in guiding learners' awareness of their linguistic problems. It was found that the learners in a recast group achieved remarkable improvement in their tense consistency, and this linguistic gain was still exhibited in the delayed posttest. Furthermore, the learners in the recast group showed a high frequency of self-correction in tense use, suggesting that recasts heightened the learners' awareness of their linguistic problem. In this study, recasts were consistently provided to learners' utterances with non-targetlike tense consistency. Han explains that "[t]his focus may have facilitated the learners' awareness of the intent of the pedagogical instruction and may have in turn propelled them to align their output with the target as signaled by the researcher" (p. 568).

The aforementioned studies which identified the positive effects of implicit corrective feedback in the form of recasts on IL development suggest several conditions, under which the didactic purpose of the feedback can be recognized without ambiguity.

First and foremost, teachers' intention to correct learners' ill-formed utterances should be signaled somehow: for example, by repeating learner errors with heightened intonation or paralinguistic cues (i.e., hand signals, a funny face, and raised eyebrows). Chaudron (1977), on the basis of his analyses of students' performance in the classroom, found that teachers' corrections that worked best were those that "clearly indicated to the student the locus of the error" (p. 139). 18 Doughty (2001) also noted that "the learner needs some guidance as to what the something is when recognizing that the teacher is seeking something" (p. 255). Similarly, Lightbown and Spada (1990) reported that a teacher's explicit paralinguistic cues may have drawn learners' attention to their errors, which in turn led to successful pedagogical intervention. Such incidental interventions, furthermore, have been reported not to hinder the flow of communication in meaning-based classrooms (Doughty & Varela, 1998; Lightbown & Spada, 1990). As discussed previously, the initial focus-on-forms instruction (Ellis et al., 2001) and the attentional-getting phase in corrective recasting (Doughty & Varela, 1998) may have alerted learners to recognize the didactic purpose of recasts. The lack of such cues in Lyster and Ranta (1997) might have led to learner confusion as to whether teachers were commenting on the meaning or the form of their utterances.

Also, correction should be focused. As mentioned before, in the studies by Doughty and Varela (1998) and Han (2002b), the focus of recasts was limited to target features set in advance (i.e., past time reference and time consistency respectively). On the other hand, in the French immersion classes Lyster and Ranta (1997) observed, the teachers' correction targeted on a wide range of learner error types. Overwhelming linguistic data in the form of corrective feedback may overload learners' cognitive capacities, which in turn brings about confusion and ambiguity. The examination of studies in and out of L2 classrooms leads to the conclusion that corrective feedback, especially recasts, is only ambiguous when it is just one type among many

¹⁸ Chaudron (1977) called this *repetition with reduction* and *repetition with emphasis*.

¹⁹ Although the target features were already established in advance by the researchers, the learners were not informed that these features were being studied or would be the focus in some way.

communicative moves used by teachers to respond to a wide range of learner error types (Doughty 2001; Nicholas et al., 2001).

Finally, it appears that teachers need to extend wait-time between hearing learners' response to feedback and topic-continuation moves in order to provide opportunities for learners to detect any input-output mismatches (James, 1998; Lyster, 1998a). Lyster (1998a) cautions that "teachers' frequent topic-continuation moves following recasts are more likely to draw attention to content than to form" (p. 76). As reported previously, the teacher in Doughty and Varela (1998) always provided the students with opportunities to repair their errors, and this turned out to be of benefit for the students to detect the disparity between their output and the teacher's input embedded in their feedback.

As mentioned above, learners' noticing of implicit corrective feedback can be reinforced by extrinsic enhancement. In other words, externally created reinforcement may render implicit feedback explicit enough for learners to recognize its corrective purposes. However, the degree of explicitness required may hinge upon other factors such as learners' levels of proficiency (e.g., Philp, 2003; VanPatten, 1990), readiness for certain linguistic features (e.g., Han, 2002b, Mackey & Philp, 1998; Philp, 2003), the linguistic features targeted (e.g., Doughty & Williams, 1998; Gass, Svetics, & Lemelin, 2003; Schmidt, 1995; VanPatten, 1994), and the contexts where feedback is provided (e.g., Ellis et al., 2001; Nicholas, Lightbown, & Spada, 2001; Oliver & Mackey, 2003). Such factors merit careful examination to isolate optimal ways to promote learners' noticing of the gap. However, such explorations are beyond the scope of this paper.

More importantly, it must be noted that the externally created enhancement by the feedback providers may not match the enhancement internally created in the learner's mind (Sharwood Smith, 1991). This potential mismatch is why we need to explore learners' noticing of feedback based on learner-oriented research, and not solely based on teacher/ researcher-oriented research.

Direct Measure of Learners' Noticing of Corrective Feedback

Mackey et al. (2000) investigated learners' perceptions²⁰ of implicit corrective feedback obtained during task-based dyadic interactions, employing a stimulated recall protocol. Interviewers provided corrective feedback to the participants' nontargetlike utterances, and this interaction was video-taped. Immediately following completion of the task-based activities, the learners watched the tape and recalled how they had perceived the corrective feedback provided during the interaction. The results indicated that while the learners in general accurately perceived the feedback on lexical and phonological errors provided in the form of confirmation checks, they showed relatively low levels of accurate perception of morphosyntactic feedback in the form of recasts.

At first glance, this study seemed to show that recasts were not effective in raising learner awareness. The results of this study, however, should be interpreted with caution. First, as Mackey et al. (2000) pointed out in their discussion, the study was based on interaction occurring in communicative tasks. It has been reported that morphosyntactic features (e.g., agreement, plural information) rarely prevent interlocutors from comprehending each other's utterances (e.g., Pica, 1994). Hence, the learners' low rate of perception of the recasts on morphosyntactic features may be attributed to this lack of communicative salience. Also, the validity of stimulated

²⁰ Mackey et al. operationalized the term *perceptions* in a non-technical sense. For the sake of convenience of this paper, learners' perceptions of feedback are interpreted as learners' recognition of their receiving correction.

recalls has been extensively debated in L2 literature. It has been pointed out that the method may not be completely reliable as a measure of learner's perception of the feedback. The learner may either create his recall at the moment he is asked to do so or he may not be able to report what he has perceived. That is, articulation of what learners have perceived may not necessarily be equated with what is in fact perceived (Philp, 2003).

To compensate for the potential shortcomings of the stimulated recall technique mentioned above, Philp (2003) employed an immediate recall technique. She carried out the study to investigate the extent to which learners could notice native-speakers' reformulation of their IL grammar in the context of dyadic interaction. The NS provided recasts in response to any nontargetlike utterances, particularly question forms. Following each recast, the NS knocked on the table twice as a cue for the NNS to repeat what was heard prior to the sound. The result indicated that the learners noticed over 60-70% of recasts, far higher than what Mackey et al. found. However, these results may not be so surprising, considering the conditions under which the recasts were provided. Put differently, such cued immediate recall (i.e., knocking the table) may have raised the learners' awareness of recasts compared to the stimulated recall technique employed in Mackey et al.'s study. Furthermore, since recasts in this study were not provided in the same way L2 learners receive recasts in NS-NNS dyads or in most classroom interaction, the results are necessarily limited in their generalizability. This study, however, paves the way for the exploration of how other factors (i.e., developmental level of learner, length of recast, and degree of difference) can constrain the learner's noticing of the gap.

Unlike Mackey et al. (2000) and Philp (2003), Roberts (1995) could not find strong evidence of learners' noticing of corrective feedback in a teacher-fronted class in Japanese as a foreign language. He attempted to examine to what extent learners at beginning levels actually noticed a teacher's provision of feedback. Roberts tape-recorded an entire fifty-minute class and transcribed it. Several days after the class, three volunteer students were asked to view the tape in isolation and note down the meter reading every time they thought that the teacher had corrected someone. The results showed that the learners noticed 36% of error corrections, which was relatively low compared to Philp's (2003) findings. This low percentage of the learners' noticing of corrective feedback may be attributed to the different context of this study. More specifically, while the learners in Mackey et al.'s study and Philp's study were individually engaged in tasks with native interlocutors, the students in this study interacted with the teacher in a teacher-fronted classroom. In other words, the students did not receive individualized attention, which may have had an impact on their noticing of feedback (Han, 2002b; Nicholas et al., 2001). In addition, the recall session was administrated several days later. This may also have influenced the students' precise report on the feedback.

The learners' noticing of feedback in the aforementioned studies seems to be more effected by other variables such as the techniques used, the context, and the tasks the learners were engaged in rather than the type of feedback they received. Hence, the incomparability of the studies seem to make the search for general conclusions problematical. Two issues involving learner perception remain unanswered: (1) the extent to which corrective feedback prompts learners to recognize the gap between their incorrect forms and the TL forms, and (2) which kind of corrective feedback better facilitates learners' noticing of such disparity. Nevertheless, the researchers (i.e., Mackey et al., 2000; Philp, 2003; Roberts, 1995) have taken initial steps toward directly measuring how learners noticed feedback. This type of study is significant as it may allow us to observe not only whether learners notice feedback but also whether they understand the nature of the feedback by accurately interpreting the intent of feedback providers. The

following section will explore research that further explains the mismatches between teachers' intentions and learners' interpretations.

Issue 2: Mismatches between Teachers' Intentions and Learners' Interpretation

A high proportion of apparent mismatches between teachers' intended pedagogical focus and students' actual attentional focus have been reported in the SLA literature (e.g., Jones, 1992; Slimani, 1992). Like other pedagogical foci, teachers' feedback on learners' nontargetlike forms can be misconstrued owing to the mismatches between teachers' intentions and learners' interpretations (e.g., Han, 2001; Roberts, 1995; Zamel; 1985). Such mismatches subsequently render corrective feedback ineffective. Understanding learners' internal systems seems a primary factor that should be considered in order to prevent the potential mismatches.

Learners' Internal Systems

The issue of learners' internal systems has occupied a central place in SLA research since the inception of the field. Corder (1967) emphasizes the role of a learner's internal learning processes in terms of a *built-in* syllabus, i.e., an internally *programmed* sequence of learning. He contends that teachers/researchers should adapt themselves to learners' needs rather than impose teachers'/researchers' perception of how, when, and what learners should know. Sharwood Smith (1991) also cautions that "what is made salient by the teacher may not be perceived as salient by the learner" (p. 120). Thus, it is important to consider "the learner's own natural learning and processing mechanism" which "involves a kind of internally generated input enhancement" (p. 120). Similarly, Bley-Vroman (1983), in his paper on the *comparative fallacy*²¹ in interlanguage studies, warns that learners' IL systems must be considered in their own right, based on their own *internal logic*. These theoretical positions allude to the importance of understanding learners' internal language processes, cautioning that feedback heavily relying on teachers' understanding of learners' errors may not play a facilitative role in IL development.

Some empirical evidence for the importance of the understanding of learners' IL systems has been also reported (e.g., Ellis et al. 2001; Han, 2001; Han & Selinker, 1999). For instance, Ellis et al. (2001), in their research on the effects of the type of focus on form episode (FFE) on the amount of uptake, accounted for why student-initiated FFEs produced the highest level of uptake while teacher-initiated FFEs generated the lowest uptake: "the forms that teachers nominate for attention may not reflect actual gaps in students' knowledge of the L2" (p. 312). In addition, Han (2001) found that a student's persistent errors on a linguistic feature corrected by a teacher stemmed from the teacher's misunderstanding of the nature of the student's errors.

These studies elucidate a cause of potential mismatches between teachers' intentions and learners' interpretations, namely, teachers' lack of adaptation to learners (Han, 2002a). If that is the case, what should teachers consider when it comes to providing corrective feedback? Han (2002a) proposes three core requirements: (1) learners' errors should be understood as a natural product of learning, (2) teachers should have knowledge of their students, i.e., learning

²¹ Bley-Vroman argues that comparing L2 forms to TL standards by employing analytical concepts defined relative to the TL (e.g., obligatory context, error) may preclude researchers from understanding the systematic nature of the learner system. He calls the difficulties caused by this practice the *comparative fallacy*.

backgrounds, level of proficiency, cognitive strategies, and their linguistic and psychological readiness to learn a particular linguistic feature at a certain point in time, and (3) teachers should not expect that feedback will result in instant improvement but should keep in mind that learning takes time. For this reason, teachers should "make allowance for the process by repeating the corrective attempt" (p. 13). Satisfying these requirements, Han's (2001) longitudinal study on fine-tuning corrective feedback illuminated how a learner's internal logic could be examined and moved toward a more targetlike logic through the researcher's adaptation to the student.

Fine-tuning Corrective Feedback

Han (2001) defined the notion of fine-tuning of corrective feedback as "a process whereby the provider of corrective feedback tunes in to the true casual factors of an error and successfully brings the learner's attention to the learning problem" (p. 584). Her study included two subjects: a female student of Norwegian from Thailand and an experienced teacher. The corpus of the data consisted of two parts: (1) the student's written production followed by the teacher's corrective feedback, and (2) the student's performance data elicited through a grammatical judgment task, an oral interview, and a translation task. The analysis of the written production showed the student's persistence and resistance to the teacher's corrective feedback, despite the fact that the teacher applied various strategies such as correcting the student's sentences, explaining the lexical meaning, and providing an individualized form-focused exercise.

After observing the teacher's inability to induce a change in the student's interlanguage structure. Han began a fine-tuning process. The process revealed that the teacher's understanding of the student's error, i.e., confusion about er (is/are) and har (have/has), did not coincide with the student's real learning problem (i.e., lack of understanding of the notion of subject). Such misunderstanding eventually kept the student from understanding the teacher's correction. Han reported that the student "failed to recognize a real difference between her own output and the information encapsulated in the teacher's correction" (p. 589). This result, obviously, was ascribed to the mismatch between the teacher's intent and the student's interpretation. Through further investigation, it was found that her native language, Thai, played a role in creating the persistent IL construction. Han concluded that the student's "persistent error arose from L1 typological influence, and yet such influence was concealed by transfer of training (term from Selinker, 1972), a process whereby the learner found in the pedagogical input justification for her interlanguage rule and output" (p. 590). Based on the understanding of the real learning problems the student possessed, pedagogical intervention was provided by the researcher. The pedagogical assistance successfully led the student to recognize and correct the once persistent and resistant error in her own writing. Furthermore, her linguistic gains were sustained over time in the absence of any further pedagogical assistance.

In her discussion, Han differentiated her approach to treating the student's errors from the teacher's approach. The teacher's approach assumed that the teacher was the singular agent of feedback, and that feedback automatically led to learning. Han pointed out that the teacher's "[c]orrection was pursued largely on the basis of *hunch* [emphasis added]. The teacher basically corrected the learner errors according to what she felt the student' sentences ought to be like in the target language" (p. 591).²² Eventually, this resulted in several mismatches,²³ and these

²² Such a corrective strategy can be interpreted as an operationalization of the comparative fallacy (Bley-Vroman, 1983).

mismatches accordingly rendered the teacher's corrective feedback ineffective. On the other hand, in Han's approach, the underlying assumptions were that corrective feedback was a two-way and interdependent process, and that fine-tuning was essential in generating effective corrective feedback. On the basis of this approach, Han spent considerable time and made an arduous effort to investigate the learner's knowledge and tune the feedback to the student through various tasks before the provision of corrective feedback. Consequently, the fine-tuned feedback successfully brought about sustained change in the student's IL knowledge and linguistic behavior.

The study clearly shows what is necessary for teachers or researchers to provide fine-tuned corrective feedback. First and foremost, teachers' knowledge of their students is "a threshold condition" (Han, 2001, p. 591). This knowledge can be achieved through keeping track of learners' linguistic behaviors and making an effort to understand the nature of their errors. In addition, it should be kept in mind that providing feedback is not a one-way process but a two-way and interdependent process.

In sum, teachers' ignorance of their student's IL system may drive them to heavily rely on hunches concerning the nature of errors when they provide corrective feedback. Such feedback may not feed into IL development, whether or not learners indeed notice that they are being corrected. Learners' noticing of teachers' corrective feedback does not necessarily warrant that the feedback will facilitate L2 development. What appears to matter is the match between the teacher's intent and the learner's interpretation, which can be ensured only through teachers' efforts to tune feedback to individual learners. Teachers or researchers should remember that learners' linguistic behaviors are governed by their *internal logic*, not by externally imposed logic.

Issue 3: Roles of Different Type of Implicit Corrective Feedback: Selfgenerated Repairs vs. Recasts

Implicit corrective feedback can be further classified into two types depending on whether or not the correct form is conveyed by interlocutors. Recasts, by definition, provide the correct form immediately after learner errors. On the other hand, other types of implicit corrective feedback (e.g., clarification requests, elicitations) do not provide targetlike forms. Instead, they promote learners to repair their errors by themselves by providing a chance to reformulate their previous ill-formed utterances. Which type of implicit corrective feedback can be the most beneficial to learners has been argued in SLA literature. In this section, these arguments and the roles of different types of feedback will be examined and discussed.

Types of L2 Acquisition

Proponents of self-generated repair propose its two supportive functions in SLA. First, corrective feedback that assists learners in modifying their use of nontargetlike forms allows learners to actively confront errors in ways that may lead to revisions of their hypotheses about

²³The reported mismatches can be classified into three: (1) an overarching mismatch between the teacher's correction and the real nature of the learning problem, (2) mismatches between the teacher's intent and the student's perception, and (3) a mismatch between the teacher's understanding of the learning problem and its real nature.

the target language (e.g., Allwright & Bailey, 1991; Chaudron, 1988; Corder, 1967; Lyster & Ranta, 1997, Pica et al., 1989). Second, corrective feedback that invites self-generated repair provides opportunities for learners to "automatize the retrieval of target language knowledge that already exists in some form" (Lyster & Ranta, 1997, p. 57). These arguments are in line with Swain's (1995) proposal that "modified, or reprocessed, output can be considered to represent the leading edge of a learner's interlanguage" (p. 131).

However, Long (forthcoming) challenges these claims. He points out that "acquisition of new knowledge is the major goal, not *automatizing* [emphasis added] the retrieval of existing knowledge" (p. 32). In the absence of a model of the correct form, learners only correct their own errors under the condition that they already know the correct target item. Otherwise, "feedback moves which demand immediate second efforts may merely create further embarrassment through exposing their lack of knowledge publicly again" (p. 32).

The aforementioned contentions, strong as they are, may be primarily due to the different assumptions about the acquisition possibly brought about by implicit corrective feedback. Ellis (1997) differentiates two types of acquisition: (1) acquisition as the internalization of new forms and (2) acquisition as an increase in control over forms that have already been internalized. Following this line of thinking, the above argument can be reframed. Researchers (e.g., Lyster, 1998; Mackey et al. 2000; Panova & Lyster, 2002) who support self-generated repairs place an emphasis on the role of corrective feedback which increases learners' control over already existing knowledge (i.e., proceduralizing target language knowledge that has already been internalized in declarative form), which echoes Ellis's second dimension. Thus, such repairs are considered important since learners' pushed-output (Swain, 1985, 1995) is deemed to play a role in increasing the learners' control over an already existing internal system. In contrast, Long (forthcoming; Long et al., 1998) suggests that in order for corrective feedback to contribute to L2 acquisition, the feedback should lead to the first dimension (i.e., acquisition of genuine new forms). Long accordingly underlines the prominent role of feedback in helping learners' acquisition of new forms by providing models in the form of recasts. Thus, for Long, recasts are the most beneficial and appropriate feedback type since they provide not only negative evidence but also models.

Han (2002b), however, by looking at SLA as a skill acquisition process, hypothesizes that recasts would be more favorable on linguistic features that "are in the process of being proceduralized than on forms that are at the onset of developing knowledge" (p. 552). This suggestion derives from the intrinsic nature of recasts: (1) they are inherently implicit and non-elaborate, and (2) require learners to be engaged in both semantic processing and syntactic processing (Lyster, 1998). These qualities may reduce the likelihood that recasts prompt learners to notice the correction. Under this condition, it may be beyond learners' ability to acquire new forms through recasts.

Unlike Han (2002b) and Lyster (1998), Long (forthcoming) claims that recasts allow learners to allocate their attention to new forms and eventually acquire them. He suggests that the implicitness and unobtrusiveness of recasts may allow learners to focus on meaning, while still dealing with linguistic problems. In addition, Long mentions that recasts convey needed information "when the learner already has *prior comprehension* of at least part of the message thereby facilitating form-function mapping" (p. 4). Long speculates that under this condition the learner may be motivated to attend to the utterances provided by the teacher, and in turn to notice any new linguistic information in the input. Also, he points out that since the learner already understands all or part of the teacher's response, he or she has "additional freed-up *attentional*"

resource which can be allocated to the form of the response, and, again, to form-function mapping" (p. 4). In other words, double-processing (semantic and syntactic processing) can be of benefit in learning new linguistic forms.

Which types of implicit corrective feedback are more effective has been a matter of debate. However, as discussed above, depending on which dimension of L2 acquisition (i.e., internalizing new knowledge or automatizing existing knowledge) is highlighted, different feedback types have been recommended. In fact, whether or not recasts are more effective in terms of learning a new linguistic form is an empirical question worthy of further exploration.

Hence, it seems unnecessary to debate which type of feedback is more effective. If L2 acquisition indeed entails two dimensions, both types of feedback facilitate L2 development, but in different ways. Recasts may enable learners to be exposed to target forms and elicit repetition, and this repetition may, in turn, enhance salience. Enhanced input may also contribute to the acquisition of new linguistic forms. In addition, as claimed previously, learners may be able to juxtapose incorrect and correct forms through recasts, and eventually notice the gap (Doughty 2001; Long, 1996, forthcoming). The other types of feedback that provide clues to learners in modifying their initial ill-formed utterances may provide learners with opportunities to proceduralize their internalized declarative knowledge of the TL, and thereby test hypotheses. Hence, based on the understanding of what learners need, ²⁴ it seems more important to explore ways of using different types of feedback than to debate which type is more beneficial.

Learners' Immediate Incorporation of Feedback

Another contentious issue pertinent to self-generated repairs and recasts is related to the learner's immediate incorporation of corrective feedback. Learners' immediate responses have been considered the gauge of the efficacy of corrective feedback. Chaudron (1977), for example, suggests that "the main immediate measurement of effectiveness of any type of corrective feedback would be a frequency count of the students' correct responses following each type" (p. 440). This point of view, based on empirical evidence that recasts elicit the lowest rate of learner uptake (Lyster & Ranta, 1997; Mackey et al., 2000; Panova & Lyster, 2002), casts doubt on the role of recasts in L2 development.

However, the dearth of learner uptake can be attributed to the lack of opportunity for incorporation. For example, Oliver (1995) reported that implicit corrective feedback in the form of recasts was sometimes presented in the form of a yes/no question, and thus it naturally induced a simple yes/no response. Also, it was found that NSs/teachers tended to take the floor again right after they had recast NNS/student errors to avoid conversation break-downs (Lyster & Ranta, 1997; Oliver, 1995). These arguments show that the lack of learners' immediate responses may be due to the inappropriate provision of feedback which precludes an immediate response or reformulation.

Furthermore, the absence of an immediate response does not indicate the absence of IL development. Mackey and Philp (1998) found that learners benefited from recasts even when the feedback was not incorporated into the learners' subsequent output. By the same token, the presence of an immediate incorporation is not necessarily evidence of IL development. Indeed, there seems to be insufficient empirical evidence showing the relationship between learners' immediate incorporation and IL development. Such a relationship seems worthy of further

²⁴ The appropriate types of feedback need to be decided by consideration of learners' developmental levels *vis-à-vis* a linguistic feature and preference for certain types of feedback they find non-threatening (James, 1998).

investigation to prove the effects of learners' immediate response to feedback on L2 development.

CONCLUSION

This paper attempts to examine and discuss three major issues that arise in research on corrective feedback in L2 acquisition. As we have seen, in order to make claims about the role of corrective feedback in IL development, the function of corrective feedback as a trigger for learners' noticing of the gap between their IL and the TL needs to be spelled out. Some theoretical and empirical studies conducted thus far indirectly support the idea that the provision of contrastive evidence (i.e., correct forms and incorrect forms) or of output opportunities for reformulating their initial ill-formed utterances may play a role in stimulating learners' noticing of gaps. However, such indirect evidence is not substantial enough to provide a clear picture of how and to what extent such feedback stimulates learners to notice the gap. Given that 'noticing' is a subjective experience (Schmidt, 1990, 1995, 2001), there is a need for more empirical studies to generate introspective data, which may allow us to more closely and directly investigate learners' noticing of gaps prompted by corrective feedback.

It seems also vital to bear in mind that learners' noticing of gaps is not a static phenomenon. It can be constrained not only by learners' internal factors (e.g., learners' level of proficiency, L1, age, and working memory) but also by external factors (e.g., linguistic features, task effects, and context). Nevertheless, up to now, few studies have investigated how and to what extent those factors trigger and manipulate learners' noticing of gaps. Such explorations may be invaluable to explain learners' inter- and intra- variations that may be attributed the effectiveness of corrective feedback on L2 learning.

As discussed through this paper, the crux of the facilitative role of corrective feedback appears related to its role of drawing learners' attention to the gaps between their output and the TL. For this reason, whether or not feedback can successfully lead learners to notice such gaps seems the most pivotal condition for a positive outgrowth of corrective feedback on L2 development. Put differently, tuning feedback in to learners' IL systems is of tremendous importance in order for feedback to feed into IL development. This premise justifies more studies on developing diverse strategies for fine-tuning corrective feedback and making effective use of different types of feedback (i.e., recasts or self-generated repairs) at appropriate times.

In addition, the measurement for future studies needs to be more focused on the processes of learning not on the product of learning. Learners' utterances may not be completely congruent with targetlike utterances at the end of the study. However, this does not necessarily mean that the provision of corrective feedback has had no effect on L2 development. Learners may exhibit improvement although the final version does not completely match target forms. Such improvement may be only detected by more process-oriented measurements (i.e., interlanguage analysis) than product-oriented measurements (Doughty & Varela, 1998).

Finally, to claim a decisive role of corrective feedback in IL development, the effect of feedback on learning needs to be studied over much longer periods with greater attention paid to ecological validity. As Brock et al. (1986) put it, "[a] learner may require a certain amount of time to make use of negative input, and in the interim will continue to operate with old, as-yet-unmodified hypotheses" (pp. 235-236). Similarly, Lightbown (1998) cautions that learners' inability to make an immediate behavioral change cannot be taken as evidence that there is no learning. Learners may not be able to show any improvement during treatment processes and

immediate posttests. However, this does not mean that the learners do not learn at all. Gass and Varonis (1994) also point out that "it is important to keep in mind that the absence of short-term effects does not exclude the possibility of long-term effect" (p. 286). By the same token, the presence of short-term effects does not warrant claims of long-term effect. The short-term effects can be exhibited by a simple memorization of rules without IL restructuring, but acquisition is not equivalent to memorizing some rules or linguistic behaviors. Given the fact that many studies that have tested the efficacy of corrective feedback in L2 acquisition thus far are mostly cross-sectional in nature, more longitudinal studies seem to be warranted to claim the ultimate effect of corrective feedback on SLA.

We are still left with many thorny and unsolved questions that need to be answered to find out optimal conditions in which corrective feedback is conducive to SLA. The spirit of our search for this must always remember that "corrective feedback is a two-way, interdependent process, involving the giver and the receiver, with both being information providers" (Han, 2001, p. 591).

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