

NEGOTIATING THE L2 LINGUISTIC ENVIRONMENT

CATHERINE DOUGHTY

University of Hawai'i

INTRODUCTION

Increasingly, the interests of L2 teachers and social interactionist SLA researchers have converged upon the aim of understanding language learning processes that are engaged as a consequence of the kinds of tasks and participation patterns that teachers (or researchers) choose to use in order to promote SLA. This convergence of practical and empirical interests is well represented in a line of classroom-oriented SLA research known as *negotiation* studies. In contrast to the increasingly frequent use of negotiation to describe pedagogical constructs such as the *negotiated syllabus* or the *negotiated curriculum*, in which the notion of negotiation is more akin to the everyday sense of (teachers and learners) reaching explicitly stated agreement on language learning (and other) goals, in Second Language Acquisition (SLA) research, negotiation has, thus far, referred particularly to the *negotiation of meaning*, which is an incidental, discourse-level language acquisition process that occurs typically during communicative language learning tasks. This paper presents the negotiation model and discusses a number of empirical studies in order to convey the unique perspective which SLA brings to the notion of negotiation and to assess its relevance for language teaching practice. To this end, the aims are (a) to present the social interactionist perspective on SLA in a historical fashion, tracing its early tendency to emphasize the importance of meaning and communication to SLA through to its increasingly sophisticated recognition that SLA involves the continual mapping by learners of L2 forms, meanings, and communicative function; (b) to review critically the negotiation studies which sought empirically to establish a connection between interaction and SLA, and (c) to show how the shortcomings of the empirical research on negotiation has been the impetus for the promising line of classroom SLA research known as focus on form.

Negotiation of meaning typically takes place in the context of a communication *breakdown* caused by a combination of task demands and the limitations of the L2 linguistic ability of language learners. In this sense, negotiation of meaning is a kind of linguistic problem-solving, the motivation for which comes from the communicative

pressure inherent in classroom tasks.¹ Some problems to be solved by language learners are, for instance, “make yourself understood, even though your interlanguage (IL) lacks or distorts certain features of the target language,” or “understand, even though what you are listening to seems to be incomprehensible.” To repair the breakdown, the interlocutors must somehow negotiate the disparity between their L2 abilities and the target language, thereby attaining the mutual understanding needed to complete the task at hand.

For example, when following assembly directions for constructing exact replicas of each other’s objects (e.g., a “Lego” construction as in Loschky & Bley-Vroman, 1993; or an “Incredible Cross-Sections” pictorial scene as in Doughty, 1996a), it has been shown that interlocutors negotiate for meaning usually by clarifying their own and each other’s utterances and by confirming or checking for understanding. In this repair process, sometimes the less proficient speaker (learner vs. teacher or less vs. more proficient learner) has to stretch his or her input-processing capability and/or L2 output production in ways that are believed by SLA theorists to be beneficial to language acquisition. Thus, it can be seen that, whereas pedagogically, the aims of communicative language learning tasks are often simply to promote more learner (rather than teacher) talk on the general assumption that any additional opportunity for L2 talk is likely to be beneficial, the additional perspective taken in SLA research is to examine the qualitatively different interactional features of negotiation (as opposed to other types of learner talk), with a view to explaining the specific ways in which negotiation is *psycholinguistically* effective for language learning.

The Negotiation Model

A simple discourse model of the negotiation of meaning is shown in Figure 1, and some examples are discussed below. The first turn in the discourse sequence—the *trigger* for the negotiation of meaning—is any utterance or part of an utterance that is not understood. The interlocutor having difficulty will signal a lack of comprehension, and then the first speaker usually responds by making an attempt to repair the trigger. The signaler will then finalize (or possibly extend) the repair by reacting to the response.²

¹ It should be noted that negotiation of meaning certainly occurs *outside* of classrooms, but the focus here will be on classroom SLA.

² There can be nested negotiation sequences, as well as side sequences depending upon the extent of the breakdown of communication.

Trigger → Signal → Response → Reaction
--

Figure 1. Negotiation of meaning in the context of a communication breakdown.

Signals vary from open, clarification-request signals like “excuse me?” (see Example 1), in which it seems that little was understood, to a more circumscribed confirmation check such as can be seen in Example 2; here the interlocutor comprehends at least something but wants to be certain or get a greater or more precise understanding of the trigger, and so says, “that’s the control room?” In the examples (Doughty, 1996b), the trigger is underlined and shown in bold, and the signal is italicized and underlined.

(1) Clarification request

NNS top is a **[brig] arch**
 NS brick brick?
 NNS [brig] arch ...[brig] arch and uh worker?
 NS hmmm? what is? *brick arch? what's that?*
 NNS [brig] arch- autom uh some a fire place . br- [brig] arch inside the fire box
 was an arch made of fire [brayk] ... fire [bri] uh fire box

(2) Confirmation check

NNS and driver .. in- uh in the window driver lean the window ... in the left
 side ... his left side .. uh he watch the uh front side or ... **control room**
 NS uh huh
 NNS is many kind gaugi or pipe and
 NS yeah *that's the control room?*
 NNS yeah
 NS ok

At times the trigger and the signal for a negotiation sequence are one in the same, e.g., a speaker’s own utterance, which he or she predicts might have a chance of being

misunderstood. In this case, the speaker will check pre-emptorily by using rising intonation for understanding as shown in Example 3:

(3) Comprehension check (plus another confirmation check)

NNS you must have part of a train that ... it's kind of teater- theater - *the people stay anything in the- in the chairs and and see something?*

[by using utterance-final rising intonation, the NNS is checking for comprehension]

NS *they're sitting and they're watching a movie?*

NNS mm yeah something like that yes

Example 3 is especially complex in that the NNS utterance, which is a comprehension-check type signal, is followed by a NS confirmation check, which also signals a potential for misunderstanding. Nonetheless, this nested sequence is quite typical of negotiated interaction in which interlocutors strive for mutual comprehension.

Any or all of the signal, response and reaction components of a negotiation sequence may include some kind of linguistic adjustment to the original trigger which, ideally, will be in the direction of the target language. These interactionally-motivated linguistic adjustments are claimed to facilitate language acquisition. That is to say, the essential feature of any negotiation sequence is the opportunity that is provided to the learner to process utterances in the L2 which become more comprehensible (a) to the learner via understanding more or (b) by the interlocutor via the learner becoming more targetlike. From the above examples, it can be seen that the source of the communication breakdown is the trigger and that this trigger can be spoken either by a language learner or by a native speaker, if the classroom task involves, for instance, the teacher or a native-speaking language assistant. Empirical research has shown that breakdowns occur typically in cases of asymmetrical language ability, knowledge expertise or social status, but when equal task demands are placed on interlocutors (Pica, Holliday, Lewis, Berducci, & Newman, 1991; Zuengler, 1993; Zuengler & Bent, 1991). Such research suggests the importance of the design of the classroom activity in terms of participation pattern and task, as will be discussed further below.

It is important to note that interest in negotiation of meaning has developed both pedagogically via the communicative language teaching movement and theoretically via SLA explanations for language learning processes. To introduce the theoretical underpinning for the SLA concept of negotiation, the next section provides a synopsis of the social interactionist theory of language acquisition, which is the SLA model that most

clearly motivates empirical interest in the negotiation of meaning. The discussion then turns to the evolution of the construct of negotiation with regard to second language, in particular, as well as to an evaluation of the usefulness of negotiation to L2 language learners.

Social Interactionist Theory of Language Acquisition

Currently, there are intense debates over the relative weight of contributions of a putative innate and language-specific device that predisposes humans toward language acquisition versus the influence of the linguistic data made available to a more generally computational (“neural network”) brain through language interaction experience. Between the two extremes—i.e., that language acquisition is guided solely by innate principles or that language learning is entirely computational, involving cue frequency counting and strengthening of network connections—is the social interactionist position, which holds that language acquisition is a constantly integrative process, involving interaction between a human predisposition to handle language data in a particular way and that data which the language learner happens to encounter in everyday experience. In other words, an essential tenet of social interactionist theory is that the structure of language data is useless to the language learner until that structure has a function that is relevant to the learner’s immediate communicative needs. Thus, social interactionists envision language learning in terms of a hypothesis-testing model, involving confirmation or rejection of hypotheses by the learner through interaction with linguistic data during meaningful communication. In this way, the functions of language in social interaction are claimed to shape the detailed processes of language acquisition by providing an interpretable context in which learners can analyze the structural elements of their linguistic hypotheses in comparison with the data available to them through language experience.

Assuming that these basic tenets are true, social interactionists propose further claims about the processes of language acquisition. First, the language learner focuses acquisitional attention on those components that are needed for communication and/or are most salient to perception (for example, stressed or fronted elements). Also, the current state of the learner’s developing linguistic system shapes the interaction with the environmental data in important ways. For instance, interlocutors tend to modify their language to a level somewhere near the ability of the language learner; interlocutors often provide salient exemplars of linguistic data which is currently in demand by the learner; interlocutors connect language to objects and actions that the learner is currently attending to (this is especially true in child language acquisition); and interlocutors finely

tune their responses to learners in ways that focus attention on nontargetlike features of the learner's language. Throughout this paper, these important claims of social interactionist theory will provide the basis for the discussion of the role of negotiation for meaning in classroom SLA. The compromise theoretical position offered by the social interactionist theory of language acquisition holds considerable appeal as it incorporates both the fascinating human innate capacity for language and the driving, shaping force of communicative intent in language acquisition.

Negotiation of Meaning

The concept of L2 negotiation emerged from nearly two decades of theorizing and empirical research in first and second language acquisition. While a thorough discussion of this body of theory and research is beyond the scope of this paper, it will be our purpose to trace the argumentation and experimentation which led language acquisition researchers from a consideration of input, to investigations of interaction, to the model of negotiation of meaning and, ultimately, beyond. In tracing the development of the notion of L2 negotiation, an analogy to child language acquisition is useful. Research on the linguistic environment of the child essentially has shown that the speech addressed to children is qualitatively different from speech addressed to other adults (Snow & Ferguson, 1977). In particular, while the language directed to children is generally *well formed*, the input tends to be simpler and tuned to the child's linguistic and communicative needs on syntactic, phonological and semantic levels. Child language researchers have claimed that such differences in speech addressed to children may contribute to language development. In other words, appropriately adjusted input aids language acquisition processes (Galloway & Richards, 1994). As is the case with parents or other caregivers interacting with their children, the SLA proposal is that competent language users (teachers or other native speakers, for example) participate in the language experience of the language learner in some seemingly beneficial way (Doughty, 1994b). It is the goal of social interactionists in SLA to explain the benefits of this interaction in the context of an overall theory of SLA. Owing to the findings on child-directed discourse, SLA researchers naturally became interested in a number of questions pertaining to the linguistic environment of the second language learner. How does speech addressed to the learner differ from language used in NS-NS conversations? If there are differences, do they help the learner's comprehension or acquisition? If these differences affect SLA in any way, are they necessary and/or sufficient for SLA? In other words, can the influence of the linguistic environment help to *explain* SLA?

In studies of native speakers (NSs) talking to nonnative speakers (NNSs), the most commonly observed features of speech addressed to classroom language learners (*teacher talk*) and for that matter to L2 speakers outside the classroom (*foreigner talk*) were found to be very similar to those of child-directed discourse (*baby talk*) (for review, see chapter 5 of Larsen-Freeman & Long, 1991). Early on then, interactionist SLA researchers essentially incorporated the L1 claims concerning the importance of the linguistic environment into the theory of second language acquisition, initially without any empirical support. The first well known SLA claim was that comprehensible input (i.e., that input which is adjusted to just slightly above the learner's L2 ability) is both necessary and sufficient for SLA (Krashen, 1977). This *comprehensible input hypothesis* attempted to explain the relationship between the language learner's hypothesis-testing described by social interactionists and the input data made available through language experience (Krashen, 1985; Krashen, 1982).³

By now, this claim is infamous. Though, many SLA theorists do agree with Krashen's original notion that the comprehension of input is important in SLA, the claim that comprehensible input alone is both necessary and sufficient for SLA has been severely criticized on several grounds (Gregg, 1984; Lightbown & Pienemann, 1993; White, 1987). Furthermore, since it had been shown by L1 researchers that, in addition to the special input adjustments which adults speaking to children make, the entire *discourse* of caretaker-child interaction also differs from adult-adult discourse, SLA researchers began to investigate learner-native speaker and learner-learner interaction at the discourse level. The focus of SLA research thus shifted from looking only at the speech addressed to the NNS learner (i.e., the *input*) to examining the discourse in which the learner participated (i.e., the *interaction*). This shift in focus is owed chiefly to Hatch (1978), who incorporated the earlier claims of the L1 researchers into her own conversational model of SLA. Building on an L1 process called *scaffolding*, in which the adult helps the child to communicate messages which the child would not be capable of alone (Bruner, 1978; Scollon, 1976), Hatch proposed generally that, rather than building up a repertoire of structures and eventually learning how to put structures into discourse, perhaps L2

³ Krashen claimed that an L2 acquirer moves from stage i to stage $i + 1$ in IL development by understanding input that contains $i + 1$ structures and that such understanding comes about via context and extra linguistic information.

learners first learn how to “do conversation” through interaction (Hatch, Flaschner, & Hunt, 1986).⁴

As it evolved from Hatch’s discourse-analytic, conversational approach, SLA interaction research maintained the assumption that rather than build up linguistic ability from isolated structures into combinations of structures, finally using these combinations in connected discourse, the opposite learning process may better characterize SLA. In other words, through participating in conversations, specific syntactic structures may be incorporated into the learner’s developing linguistic system, as needed. Long (1980) applied Hatch’s methodology to examine conversations between NSs and NNSs in comparison with conversations between NSs. These empirical tests of Krashen’s input hypothesis and Hatch’s conversational model showed that NSs make themselves understood to NNSs not only through input modifications but also, and *predominantly*, through modifications to the interactional structure of their conversations such as the *comprehension checks*, *confirmation checks*, and *clarification requests* exemplified in Examples (1) through (3) above. Based on these findings, Long (1985) concurred with Krashen with respect to the necessity of comprehensible input, but he questioned its sufficiency as the explanatory factor of SLA and went on to argue in his *interaction hypothesis* that modifications to the interactional structure of conversation were the most important and widely used way of making input comprehensible. As noted by Pica (1994, p. 494), “over the years [since the input and interaction hypotheses], a fruitful, and often controversial, line of research has evolved, much of it focused on a specific type of interaction, which has come to be known as *negotiation*.”

Empirical Studies of the Negotiation of Meaning

The primary aims of the empirical research have been to document the special features of negotiation of meaning and to relate these to language learning processes and outcomes (for review, see Pica, 1994). As noted above, the stimulus for interactional modification is the breakdown of communication in conversations where interlocutors seek to understand each other, often for the purpose of accomplishing a task. Thus, negotiation studies expanded the importance of the influence of language experience on language acquisition from a simplistic consideration of comprehensible input to include interactional modifications by all task interlocutors: the learner, the teacher, and even the

⁴ More recent discussion of the notion of scaffolding is underway in Vygotskian approaches to language acquisition. Bruner (1995) acknowledges his debt to Vygotsky’s (1962) concept of the zone of proximal development in which the adult helps the child to accomplish more in every way, linguistic or otherwise, than she could do on her own.

other learners. At first, the efficacy of such interactional modifications that occur during negotiation of meaning was simply assumed on theoretical grounds, and the primary aim of empirical studies was to describe the kinds of negotiation that occur in classroom-like tasks.⁵ Early research, indeed, was able to determine what kinds of tasks are more likely than others to foster negotiation. For instance, aiming initially to validate empirically the widespread use of small group work (as compared with teacher-fronted work) in the ESL classroom in terms of promoting negotiation, Pica and Doughty (1985) showed that, above all, task is an important negotiation variable. During an opinion exchange task, contrary to what had been predicted, it was found that very little negotiation emanated from either class participation pattern, teacher-fronted or small group.⁶ Instead, without any task constraints, one interlocutor (either the teacher or a dominant or linguistically more proficient group member) would generally take the floor and solve the problem single-handedly.

This surprising finding led to a second study, in which different tasks (opinion exchange vs. information gap) as well as different participation patterns (teacher-fronted vs. group vs. pair) were compared with respect to creating opportunities for negotiation of meaning (Doughty & Pica, 1986).⁷ It was found that the information-gap task stimulated negotiated interaction better than the opinion-exchange task, and that the greatest amount of negotiated interaction was generated by the gap task in the small-group participation pattern. The important features of gap tasks are that they require an equal exchange of information among all interlocutors and that they have known solutions that participants are working toward and must contribute to before the task can be completed (Doughty & Pica, 1986; Long, 1989; Pica, Kanagy, & Falodun, 1993). The outcome of this early descriptive work was essentially the refinement of the research methodology which captures negotiated interaction and provides some indication of the kind of classroom conditions which might be conducive to negotiation. If negotiation is the aim of the task, then the task should be designed to be carried out in a small-group format and (a) should incorporate a requirement for information exchange such that no task participants may opt out of the interaction and (b) should have a convergent goal which all participants will be able to recognize as having been accomplished. In this way, learners of all levels

⁵ This seems a shaky approach in hindsight, but at the time, the theoretical arguments were widely agreed upon in the field.

⁶ The tasks used here were typical of ESL materials of the day: *Who gets the heart?* based on information on a list of potential recipients and *Who adopts the baby?* based on a similar list of prospective families.

⁷ The information gap task was a "garden-planting" jigsaw task in which each interlocutor was given an equal amount of but different kind of information needed to complete the task.

of ability will contribute to the interaction until the task is completed, and a number of communication breakdowns leading to negotiation may be expected to occur.

The focus of empirical research on negotiation since these descriptive studies has been to try to establish a connection between negotiation and SLA. Though tasks had been developed which could document the plausibility of interaction involving the negotiation of meaning, no link had yet been shown between such interaction and identifiable acquisitional processes. To this end, Pica, Young, & Doughty (1987) investigated input comprehension within a negotiation framework, testing the claim that negotiation between learners and interlocutors facilitates comprehension. This was important to do since the theoretical argument had been made for the acceptability of an indirect proof of the relationship between negotiation of meaning and SLA, in the absence of direct proof. That is to say, Long (1985, p. 378) proposed the following three-step, indirect demonstration of the "relationships between environmental features and interlanguage development:"

- Step 1: Show that (a) linguistic/conversational adjustments⁸ promote (b) comprehension of input;
- Step 2: Show that (b) comprehensible input promotes (c) acquisition;
- Step 3: Deduce that (a) linguistic/conversational adjustments promote (c) acquisition.

Since, at the time, theorists were more or less convinced of the $b \rightarrow c$ relationship (Krashen, 1982; Long, 1983), researchers were attracted to demonstrating the $a \rightarrow b$ relationship which would enable the indirect link (shown in Step 3) to be made between negotiation and SLA. As shown in Figure 2, Pica and her colleagues examined the comprehension of NNSs under two conditions: pre-modified (essentially simplified) input without any opportunities for negotiation vs. unmodified input (generated by NSs) with spontaneous negotiation (Pica, Doughty, & Young, 1986; Pica, Young, & Doughty, 1987):

		<u>Conditions</u>
<i>Groups:</i>	Modified Input	+ input modification; - interaction
	Negotiation	- input modification; + interaction

Figure 2. Promotion of the comprehension of input.

⁸ Linguistic adjustments are input modifications, and conversational adjustments are interactional modifications, both of which are found in negotiation sequences.

Compared with the pre-modified text of directions generated by the researchers, the spontaneous directions negotiated by the subjects contained significantly more repetitions and rephrasings of breakdown triggers. Furthermore, the comprehension of the negotiation group was significantly better, and it was found that, among those directions which were understood better in the interactionally modified condition than in the pre-modified input condition, three fourths of these involved substantial negotiation. These findings were taken to support the claim that negotiation facilitates L2 comprehension more effectively than does input modification, and, at least for a time, that negotiation could be said to be linked, albeit indirectly, to SLA.⁹

Negotiation of Meaning and Acquisition

Although comprehension is undoubtedly *one* important language acquisition process, researchers eventually became dissatisfied with the indirect approach to establishing a unique connection between negotiation and acquisition via comprehension, preferring ultimately to look for more direct evidence that negotiated interaction leads to SLA. Researchers next hypothesized that, in addition to improved comprehension through negotiation, learners also gain specific information about how to *restructure*¹⁰ their interlanguage grammars through the cognitive comparisons that are enabled by working out communication breakdowns in the target language. In particular, as learners engage in communicating messages in the target language, such communication involves the feedback necessary to facilitate both comprehension and production. This feedback is what gives the learner information on the proximity of their IL to the target language (TL) (Pica, Holliday, Lewis, & Morgenthaler, 1989). In the *comprehensible output hypothesis*, Swain (1985) has claimed that such opportunities to produce *comprehensible output* in response to feedback on initially incomprehensible utterances (termed *pushed output*) are equally vital to the development of the learner's interlanguage competence as are opportunities to comprehend input. White (1987) has made a related point in her proposal for an *incomprehensible input hypothesis* that emphasizes that it is what the learners do about their lack of understanding that leads to interlanguage development.

⁹ Since the spontaneously interacted tasks were *longer*, it was possible that comprehension was a result of *more* rather than *negotiated* interaction. This possibility was ruled out in a subsequent study in which the time factor was controlled by making the pre modified input as long as the interactionally modified interaction which took place first (Pica, 1991). (Loschky, 1994) further argued that since it is an inherent feature of negotiation in comparison with non-negotiated interaction, objections pertaining to any simple time advantage are untenable.

¹⁰ Restructuring is the psycholinguistic process by which the mental representation of the interlanguage changes en route to but not always at each stage in accordance with the target language.

The first step in establishing a more direct connection between negotiation and SLA was documenting the existence of opportunities for cognitive comparisons made possible when NSs or other NNS learners modify for their interlocutor's benefit, as well as by comprehensible output which reveals that learners modify their own production toward the target due to the assistance of feedback from their interlocutors. Pica et al. (1989) have described extensively learner and interlocutor restructuring of IL and TL, finding that NSs and learners can modify their speech toward comprehensibility either semantically via repetition, rephrasing, and elaboration moves, and/or syntactically via segmentation of IL units using stress, isolation, and movement. Through these interactional modifications, input becomes perceptible data for language acquisition processes, and learners receive feedback which helps them to modify their own IL production attempts.

Moving forward from the hypothesis that comprehension *and* production during negotiation (and the IL restructuring which brings these about) are important acquisitional processes, the aim of interactionist research became one of going beyond the detailed description of negotiation sequences to documenting the direct—rather than logically inferred—connection between negotiation and acquisition. Thus far, two types of studies have suggested that negotiation may contribute to interlanguage development. For example, in one study of the acquisition of vocabulary and double noun locatives by L2 learners of Japanese (Loschky, 1994), the effects of negotiation both on comprehension and on SLA (operationalized as subsequent *intake* revealed on posttests) were investigated. Learners completed five days of information gaps tasks under conditions designed to expose them to unmodified vs. modified input (both without interaction) as well as to negotiated interaction (which is the combination of unmodified input plus interaction) (see Figure 3).

		<u>Conditions</u>
<i>Groups:</i>	Control	- input modification; - interaction
	Modified Input	+ input modification; - interaction
	Negotiation	- input modification; + interaction

Figure 3. Effects of negotiation on comprehension and acquisition.

Acquisition was measured by gains in recognition of 32 vocabulary items, with recognition “generally considered the first stage in vocabulary acquisition” (Teichroew, 1982 cited in Loschky, 1994, p. 308) and sentence verification of the locatives, since

verification has been “long used to measure receptive grammatical processing” (Fraser, Bellugi, & Brown, 1963 cited in Loschky 1994, p. 308). Loschky argued that without the potentially confounding factor of production, recognition and verification are straightforward and direct measures of the relationship between comprehension and acquisition. Results of this study replicated the earlier finding that negotiation facilitates moment-to-moment comprehension better than conditions without interaction (Pica, Young, & Doughty, 1987). Loschky also showed that pre-modified input did not facilitate more comprehension than the control, unmodified condition, confirming the Pica et. al findings that mere simplification of input in advance of interaction is not beneficial.¹¹ However, contrary to what had been predicted by the interaction hypothesis, this study was not able to demonstrate that moment-to-moment comprehension leads to acquisition, as all three groups made equal progress in their acquisition of vocabulary and locatives. One possible explanation for this is that recognition and verification were not stringent enough measures of SLA to have separated out the effects of exposure (control), input modification, and negotiation.

The second line of studies sought to establish the direct connection between negotiation and SLA using a different methodology—looking for instances of previously negotiated language in subsequent *production*. In other words, the effects of negotiation on SLA were examined in terms of comparing immediate modifications during negotiation and subsequent production after the negotiation, i.e., upon the next opportunity for production of the same negotiated language feature. In an early, simple discourse analysis of negotiation during a communicative task, Gass and Varonis (1989) found that a handful of instances of negotiation which both occurred early in a conversation and resulted in a learner modifying IL output toward the target language eventually did occur again some 20 turns later in the conversation, when another context for use of the same feature arose. Doughty (1992), however, found that in analyzing the discourse collected over a one-year study of classroom interaction, subsequent opportunities to use forms previously modified during negotiation revealed learners using both the original IL form and the modified form making it less clear whether one-time negotiation can permanently affect the developing IL and begging the question of how much negotiation is needed to result in acquisition.

Since neither of these discourse analytic studies employed even a quasi-experimental methodology, the findings cannot be considered conclusive. In another study, Gass and

¹¹ Note that Pica, Young, and Doughty (1987) technically could not make this claim since their study had not included a control group, whereas Loschky's study showed the lack of advantage for the pre-modified input group over the control group.

Varonis (1994) introduced two major improvements to the design of research which seeks to measure acquisitional effects of negotiation, one involving the nature of modified input and the other attempting a more precise measurement of SLA. In this complex design, they compared the effects of both input modification and negotiation on comprehension, and then attempted to isolate the effects of negotiation on learner output. To capture this, NSs were paired with NNSs, and then were assigned to varying conditions of input and interaction across two trials:

<i>Trial</i>	<u><i>Conditions</i></u>
1	- input modification; - interaction (A) - input modification; + interaction (B) + input modification; - interaction (C) + input modification; + interaction (D)
2	(A) - interaction (A) + interaction (B) - interaction (B) + interaction (C) - interaction (C) + interaction (D) - interaction (D) + interaction

Figure 4. Effects of input modification and negotiation on comprehension.

In the first trial, NSs provided directions, and NNSs completed a task involving the placement of objects on a background scene. Half of the NSs speakers read pre-modified directions, and half read unmodified directions. Within each of those two input conditions, dyads were assigned to + and - interaction conditions. In the second trial, the task roles were reversed with the NNSs providing the directions and the NSs doing the task. Once again, the groups were split into + and - interaction conditions so that the effects of prior interaction as well as prior input modification in Trial 1, as revealed in Trial 2 could be assessed. Findings revealed that both modified input and negotiation affected immediate task performance. When the NS was the direction giver (Trial 1), both of these conditions led to greater NNS comprehension, as measured by success on task. The prior opportunity to interact, in turn, enabled the NNSs to provide better directions on the subsequent Trial 2, as measured by the task success of the NS. Oddly,

however, the +interaction condition *itself* on Trial 2 did not favor the learners in that group, a finding which is not consistent with the results of the effects of Trial 1 nor with previous research. With regard to input modification, when the initial directions included modified input, the NNS was able to understand directions better, but subsequently was less able to offer clear directions than the NNS who heard unmodified input. Thus, modified input may help a NNS comprehend in the short run but may be a deterrent in subsequent language production. Finally, although the study was explicitly designed to show that negotiated language is acquired, there were no instances of language negotiated during Trial 1 that appeared in Trial 2.

To summarize thus far, studies have consistently replicated the finding that interactionally modified input is superior to modified input processing without interaction in fostering learner comprehension, as was originally reported by Pica, Young, and Doughty (1987). By now, this seems to be a fairly robust finding particularly since, whereas the input in the Pica, Young, and Doughty (1987) study had been pre-modified by the researchers, the Gass and Varonis (1994) study offered the methodological improvement that the pre-modified input was recorded naturally from NS-NNS interaction. This research advance probably explains why input modification on Trial 1 was, at least in the short-term, facilitative of comprehension. However, although Gass and Varonis provided opportunities for negotiation (Trial 1) and contexts for subsequent production (Trial 2), no instances of acquisition were found, leaving any direct link between negotiation and acquisition yet to be established.

It is important to note that opportunities for negotiation may not automatically be equated with negotiated interaction, since learners may not necessarily take advantage of the opportunity provided by the research conditions. In other words, it may be important to go beyond simply assigning subjects to +/- interaction conditions to examine the number of negotiation opportunities available in the discourse and to measure the number of negotiation sequences that occur. The task used in Gass & Varonis' Trial 2 was different than the task in Trial 1, so it is possible that there were no natural contexts in which to use acquired language.¹² An alternative explanation, if indeed negotiation, but not acquisition, had taken place in the Gass and Varonis study is that interactional modifications are not instantaneously effective and thus need time to appear as acquired, as is suggested by the researchers themselves.

Since the findings that NSs did not experience better comprehension as a function of the interactional condition in Gass and Varonis' Trial 2 were surprising, these findings

¹² The task on the first trial was assembling a farm scene, but the second task involved putting together a beach scene.

needed to be verified. To remedy the difficulties with tracing the direct link between negotiation and SLA, (Doughty, 1996a) partially replicated the Gass and Varonis study, but further enhanced the part of the design which deals with examining the effects of interactional modification on language acquisition (a) by expanding the number of trials from two to three, (b) by making an effort to match the tasks,¹³ and (c) by measuring actual rather than mere opportunities for negotiation. It was expected that the earlier benefits of interaction for L2 comprehension would be thus be replicated. Finally, in order to provide an opportunity for later emergence of interactionally modified L2 features (i.e., if time for assimilation is needed), the third trial which took place one week after the second was added to the design:

<i>Trial</i>	<u><i>Conditions</i></u>
1	- input modification; - interaction (A) - input modification; + interaction (B)
2	(A) - interaction (B) + interaction
3	(A) - interaction (B) + interaction

Figure 5. Modification of Gass & Varonis (1994).

In order to assess directly whether extracting themselves from communication breakdowns via negotiation benefits SLA, the analysis of the data gave precise attention to assessing the relationship between (a) opportunities for negotiation, (b) actually occurring negotiation sequences, and (c) subsequent appearance of negotiated language features later in the discourse of the same Trial or in later Trials. In other words, care was taken to ensure that subjects' success on task was somehow linked to their interactional experience during the task rather than simply to task-doer success.¹⁴ The findings of this study show a clear advantage for the negotiation group in all three trials, when the scoring method took into account those components in the task which are actually described by

¹³ Tasks in this study required the assembly of complex "Incredible Cross-Sections" (Biesty 1992). A passenger jet and a passenger train (the latter in two versions) were used since they contain similar scenes involving the same kinds of people (passengers and staff) and activities (eating, sleeping, watching movies, etc.).

¹⁴ Since Trials 2 & 3 were unscripted (as was the case in studies by Loshky and Gass & Varonis), it was important to note *which* pieces were actually described to the NS task doer by the NNS direction giver. Furthermore, it was apparent that sometimes during the tasks, the task doers would select a piece and place it somewhere without having heard any direction pertaining to that piece.

the NNS, perhaps solving the mystery of the lack of effect for interaction during Trial 2 of the Gass and Varonis study. Subsequently, another replication study (Polio & Gass, 1998) also used more refined scoring procedures and also confirmed previous findings that interaction does have an effect on L2 comprehension.

In order to answer the more important question of whether the +interaction condition promoted negotiation sequences which then led to acquisition (as opposed to merely providing opportunities for negotiation), Doughty (1996a) examined both the quantity and the quality of interaction that occurred during the tasks. The findings here are striking. Although learners in the negotiation group comprehended more as evidenced by greater success on task, very little interactional modification took place in the overall discourse, ranging from less than one percent for many subjects to a maximum 17% on one task for one subject. Such findings underscore the importance of documenting rather than assuming that negotiation of meaning has taken place. Despite the small amount of interactionally modified discourse, it is still possible that, where they occurred, the interactional modifications were sufficient to move the NNS L2 production toward the TL. Thus, in order to determine whether any of the negotiated language affected the subsequent productions of the NNS, each of the triggers formed the basis of a Boolean search for later occurrences of either the interactionally modified feature or the original nontargetlike version. This search was carried out across the rest of the trial transcript in which the modification occurred as well as in all transcripts of subsequent trials. Once again, the findings are striking. Of the already small number of interactionally modified language features, less than half were involved in some kind of change, but, more importantly only a fraction were modified by the NNS or the NS *toward* the TL. A much more common occurrence was that the NNS modified the NS utterance away from the target, or the NS simply accepted NNS utterances without modifying them. Finally, although this study shows, once again, that negotiation is useful in promoting comprehension, only an infinitesimal number of language features that were modified toward the TL are *only* used in a TL way later on in the same task or are used *even once* in a targetlike way in subsequent trials.

In summary then, although Doughty (1996a) looked more closely at the discourse in order to uncover the effects of negotiation on restructuring as revealed in subsequent production contexts, very few previously-negotiated language features were found in the later discourse. There are three possible explanations for this. Despite the care taken in constructing the tasks, the tasks themselves may still have provided a barrier to the kind of interactional modifications which involve linguistic adjustments. Furthermore, perhaps a certain concentration of interactional modifications must be achieved before

effects can be observed. If the tasks were appropriate, then it may have been necessary for subjects to engage in interactional modification over a longer period of time before any lasting IL changes emerge. In fact, Mackey (1995, 1999) found a positive effect for negotiation on the acquisition of L2 English questions, where the tasks targeted the features of questions, and the learners were determined to be developmentally ready for the acquisition of question formation. Ultimately, only a longitudinal study can uncover whether such effects are lasting. Finally it may be the case that interactional modification is *only* directly beneficial for L2 comprehension and that the conversational model of language acquisition is too powerful. In other words, there may indeed be a more complex, subtle, and as yet undescribed relationship among comprehension, negotiation and acquisition.

Negotiation of Form

The tentative conclusion of several researchers is that negotiation of meaning, though somehow very beneficial to language acquisition (particularly with regard to its contribution to L2 comprehension), is not the only process involved in SLA. In other words, with regard to IL restructuring toward the TL, the negotiation of meaning may not provide the entire explanation. Lightbown (1992) claims that students in communicative classrooms (where presumably much negotiation takes place) have trouble getting *quality input* and suggests that this difficulty comes about because learners cannot filter the varied input available in the classroom in terms of what *is* quality input and what is *not* quality input.

Some recent studies have begun to suggest even in the richest contexts for language learning—immersion or content-based language program—full nativelike ability is not ultimately acquired by classroom language learners. For example, studies of French immersion programs in Canada have revealed what has come to be called a *classroom register* or even *classroom pidgin* (Swain & Lapkin, 1989). While it is certainly true that after seven to ten years of virtual immersion in the second language during primary and secondary education, anglophone learners speak French far more fluently than counterpart students who have studied French more traditionally, a number of features of their French are still not targetlike and appear to have stabilized in a classroom form. One example is that of nominal gender: perhaps because there is no communicative pressure to mark the gender of nouns with the appropriate determiner, immersion students do not bother to do so (Harley & Swain, 1984). These findings and suggestions lead to the problem which is currently occupying the attention of many social interactionist SLA researchers: although there clearly have been many advantages of communicative language teaching, focusing

only on facilitating the negotiation of meaning does not enable second language learners to reach targetlike levels of ultimate attainment, even after long periods of total immersion in the second language. Something appears to be lacking with regard to formal features of language, particularly those that are not obligatory for communication. Thus, the negotiation model of incidental learning of form, whether via comprehensible input or comprehensible output, is not sufficiently explanatory. With regard to the practical considerations of the language classroom, it is now of interest to discover how learners can be brought to the acquisition of linguistic forms which are possibly unnoticeable in communicative interaction and are seemingly unnecessary (at least from the learner's point of view). This would be particularly important in contexts of advanced language learning where nativelike ability is an important acquisitional goal.

One recent advancement on the negotiation model is the emphasis on the benefits of output during collaborative discourse (Swain, 1995). For Swain, production is not simply a measure of SLA, but rather, it serves several functions which are part and parcel of the process of SLA (Swain, 1985). Furthermore, Swain proposes that there are three things that learners do under the circumstances of lack of comprehension:

1. Learners may notice a gap between what they want to say and what they can say, leading them to notice what they do not know at all, or what they know only partially (the noticing function of pushed output).
2. Output may test a hypothesis that may attract feedback that can then lead learners to "reprocess" (the hypothesis-testing function). (1995, p. 126)
3. As learners reflect upon their own target language use, their output serves a metalinguistic function, enabling them to control and internalize linguistic knowledge (the conscious reflection function).

Thus, in addition to the promotion of fluency, output has three additional functions which assist learners in moving toward targetlike accuracy in the L2. A study in which Swain and Lapkin (1995) employed a "think aloud" analysis of L2 composing processes provides evidence that learners are indeed able to notice gaps and to formulate hypotheses about how to fill them. Swain and Lapkin go on to claim that these cognitive processes of noticing and testing generate new linguistic knowledge as well as consolidate existing knowledge. These claims, of course, remain to be tested by empirical research. The third function of output is what Swain and others sometimes terms *negotiation about form* (Lyster, 1998; Swain, 1995). In this type of negotiation, learners reflect consciously about language. To investigate this metalinguistic function of output, Swain and her

colleagues employed a dictogloss task in combination with the think aloud analysis data collection technique. The dictogloss works as follows:

The teacher [prepares] a short, dense text which [deals] with a topic they had been considering in class and which [includes] grammatical features recently reviewed by her. The text [is] read aloud twice, at normal speed, to the students. While it [is] being read, students [jot] down familiar words and phrases. Following this, students [work] in pairs to reconstruct the text from their shared resources. They [are] expected to reconstruct the text as accurately as possible, both with respect to content and grammar (Swain, 1995, p. 133).

The collaborative effort of the students to reconstruct the text serves as the data to investigate the metalinguistic function of output. Reporting on the work of a graduate student (LaPierre, reported in Swain, 1995), Swain observes the first inklings that negotiation of form may result in language learning. Such an interpretation is made possible by LaPierre's design innovation in which she developed dyad-specific post-tests on the basis of the transcripts of the dictogloss interaction. LaPierre predicted that when the correct solution was arrived at during the negotiation of form in the dictogloss, this would be reflected in greater accuracy on the tailored posttest. The corollary prediction was that where negotiation of form led to the incorrect solution of the linguistic problem, learners would likely retain this incorrect information about the target language. Though no strong claims can be made since the research design provided for no pretest of the metalinguistically negotiated linguistic knowledge, the results indicated that, of the 140 negotiations leading to correct solutions, 80% were correct when subsequently tested again on the posttest, and that, of the 21 negotiations that went astray, 70% of these were still inaccurate on the tailored posttests (Swain, 1995, p. 140). Clearly there are pedagogical implications for the negotiation of form, if the pedagogical aims include accuracy. This may be particularly useful since, when learners focus entirely on task goals, they may be able to attain an adequate level of understanding without necessarily achieving 100% TL accuracy.

Focus on Form

Although there is general agreement that oftentimes accuracy is an important classroom language acquisition goal, it is by no means entirely clear *how* learners may be assisted via classroom procedures and tasks in becoming more targetlike, particularly without resorting to lists of grammar rules and/or descriptive paradigms of linguistic

structures. Long (1991) offers the following definition of focus on form which distinguishes this kind of attention to form in the context of meaningful communication from the isolation of linguistic form that is so characteristic of traditional grammar-based instruction:

...whereas the content of lessons with a focus on *forms* is the *forms* themselves, a syllabus with a focus on *form* teaches something else—biology, mathematics, workshop practice, automobile repair, the geography of a country where the foreign language is spoken, the cultures of its speakers, and so on—and overtly draws students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication. (Long, 1991, pp. 44-45)

Attention to linguistic form in language teaching can be accomplished using a variety of pedagogical interventions, ranging from the most explicit metalinguistic rule explanation to the most implicit visual input enhancement. Arguments against the more explicit procedures center around the likelihood of precluding fluency (which has been the major advancement of communicative approaches to classroom language acquisition) since, in such procedures, language becomes the object rather than the means of discussion. Thus, implicit focus-on-form techniques are potentially more viable because the aim is to *add* attention to form into a primarily communicative task (Long, 1991; Long & Robinson, 1998) rather than to *depart from* a communicative goal in order to discuss a linguistic feature. But how can learner attention be attracted to linguistic form during communication?

Perhaps some insight may be gained from recent insights gained from child language acquisition studies which have also concluded that attention or noticing is important to language acquisition: "the only linguistic material that can figure in language making [i.e., development] are stretches of speech that attract the child's attention to a sufficient degree to be noticed and held in memory" (Slobin, 1985). By now, a very large number of child language acquisition studies have shown that what children acquire early are the perceptually salient features of language, such as the beginnings and endings of words or the stressed elements of utterances (Slobin, 1985; Slobin, 1992). The findings of these studies have led SLA researchers to suggest that noticing or some form of attention is necessary for L2 learning (Schmidt, 1990, 1992, in press). If this suggestion is correct, then it is important to determine empirically when and how attention to linguistic form might benefit language learners in the classroom.

There is a considerable body of research which addresses the question of how learner attention can be drawn to form (see Doughty & Williams, 1998a&b for a review). Two additional examples of focus-on-form procedures which have evolved from the notion of negotiation of meaning will be discussed here to provide a substantive idea of how focus on form may be incorporated into negotiated interaction to greater acquisitional effect. Keeping in mind that all focus on form techniques, including these two, have in common the important aim of getting learners to notice TL features and IL gaps/holes, we turn now to the techniques of interaction enhancement and recasting.

Although the intent of the theoretical construct of focus on form is clear in Long's recommendation, the procedures and tasks remain to be specified and tested empirically. Accordingly, three specific criteria for implicit focus-on-form task development may be gleaned from Long's recommendation:

- The target of the focus on form should arise incidentally in the otherwise content-based lesson.
- The primary (in Long's terms "overriding") focus should remain on meaning or communication. And,
- The teacher should draw students' attention to form rather than risking that students will notice linguistic form without any pedagogical assistance.

Interaction enhancement is a moderately implicit focus-on-form technique designed to be integrated into communication-oriented instruction (Muranoi, 1996, in preparation). Interaction enhancement was developed on the basis of strategic interaction which takes place during interactive, problem-solving scenarios that create contexts that guide learners to use the target language in realistic discourse (DiPietro, 1987). Interaction enhancement emphasizes negotiation of meaning with some attention paid to grammatical accuracy. Like strategic interaction, it has three phases: a rehearsal phase, a performance phase, and a debriefing phase. During the rehearsal phase, the instructor gives the class a scenario which provides them with a problem to be solved through interaction (each scenario has several obligatory contexts for the target form). Students form pairs and prepare for the performance. During the performance phase the scenario is performed by a representative student and the instructor. The use of a student-teacher dyad as a performance pair distinguishes interaction enhancement from the original strategic interaction in which roles are only performed by student-student pairs. This is advantageous for interaction enhancement because the teacher needs to manipulate feedback intentionally.

The performance phase is followed by the debriefing phase in which the teacher and students (both the representatives and the audience) evaluate how well interaction was carried out. In DiPietro's strategic interaction, the focus of debriefing is on meaning. That is, the degree of success in conveying the meaning has the first priority. However, interaction enhancement adds attention to form in the debriefing stage. In this way, interaction enhancement is an improvement upon both strategic interaction and negotiation of meaning in that the teacher leads learners' attention to a particular form in the context of the communicative strategic interaction. In other words, interaction enhancement is an instructional intervention in which the teacher pushes L2 learners to produce output and provides them with very focused interactional modifications in order to lead them to notice a particular mismatch between their interlanguage grammar and the target language grammar, and to lead them to modify the incorrect output within the framework of strategic interaction.

In a study of the efficacy of interactional enhancement, (Muranoi, 1996) provided requests for repetition whenever a student performing in a rental-complaint scenario made overgeneralized errors with the indefinite article, which was the target form of the study. According to Muranoi, requests for repetition have a dual function working both to attach a flag to an incorrect form (input enhancement) and to guide the learner to produce modified output (output enhancement). Whenever the learner did not modify output after receiving requests for repetition twice, the teacher provided a recast which presented the grammatical form by modifying what the learner produced (interaction enhancement). In this study, students were assigned to different debriefing types as well, ranging from more explicit, form oriented discussion to meaning-focused debriefing. The findings of this very promising interaction enhancement study show that focused negotiation can be effective in bringing about IL restructuring. First, it was found that interaction enhancement, in which L2 teachers provide focus-on-form feedback within interactive task-based instruction, had a positive effect on L2 learners' restructuring of the interlanguage article system (as measured by their ability to use articles in new contexts provided by picture description tasks).¹⁵ Secondly, the results indicated that the impact of interaction enhancement depends upon the type of debriefing which follows strategic interaction: interaction enhancement plus attention to form during debriefing had a greater effect than interaction enhancement plus meaning-focused debriefing. Also quite interesting are the third and fourth findings that the positive effect of interaction enhancement on the learning of the indefinite article was projected onto the learning of

¹⁵ The effect of interaction enhancement lasted at least for five weeks.

the less discursively marked definite article and that interaction enhancement, which was administered in the oral mode, had a positive effect not only on the learners' oral production but also on their production in the written mode. Finally, and of potentially great interest in the EFL setting where large classes are the norm, not only learners who participated in interaction enhancement but also learners who *observed* it improved their performance with the English article system (but see Mackey, 1995, whose findings were less promising in this regard).

Another focused intervention technique—recasting during communicative activities—takes advantage of some recent developments in the study of child language acquisition through parent-child interaction that provides *negative evidence* (i.e., language experience data about what is *not* possible in the adult language) as well as on observations of the spontaneous occurrence of such evidence to learners in ESL and foreign language classrooms. As is well known in debates among child language researchers, there is little consensus as to precisely what comprises the negative evidence that provides learners with information about the proximity (or lack thereof) of their current linguistic hypotheses to the target language. Whereas early definitions limited negative evidence to explicit prohibitions or corrections of child language, and, thus defined, there was virtually no support for a role for negative evidence in child language acquisition Brown and Hanlon (1970), recently there has been a concerted effort by child language researchers to reconceptualize negative evidence in a manner that is consistent with the nature of child-directed discourse as well as to investigate any correlations between negative evidence and subsequent language acquisition. These child language acquisition findings vis à vis the provision of negative evidence by adults can only be briefly summarized here but have constituted an important source of motivation for the SLA studies discussed below. Three statistically important findings in the child recasting research are that:

- Adults are more likely to recast or request clarification of children's ill-formed utterances than of the well-formed ones (Demetras, Post, & Snow, 1987)
- Adults are more likely to recast ill-formed utterances with only one error than those with many (Bohannon & Stanowitz, 1988).
- Adults are more likely to provide "specific contrastive evidence" by giving exemplars (in their recasts) of the correct syntactic form or pronunciation immediately after the child error has been uttered (Bohannon & Stanowitz, 1988).

Such findings suggest that parents provide *systematic* information to children by recasting their errors in a focused way (e.g., on only one error and providing the targetlike exemplar). Of course, it can be argued that documenting the mere provision of negative evidence is not sufficient to claim its usefulness in language acquisition. In response to this argument, it has been shown that children both *notice* the linguistic information brought into focus by adults and seem to *make use of it* as shown by the following L1 findings:

- Children show their sensitivity to parental feedback by being more likely to repeat recasts than to repeat adult repetitions¹⁶ (Bohannon & Stanowitz, 1988; Farrar, 1992).
- Children imitate the grammatical morphemes contained in corrective recasts but do not imitate the identical information contained in other discourse categories (all constituting positive evidence) (Farrar, 1992).
- Parental feedback has been shown to be correlated with child language acquisition of specific morphemes (Farrar, 1990).

Taken together these L1 findings suggest that not only *do* adults provide negative evidence to children, but children *notice* this information and *make use of it* in acquisition. Furthermore, examination of child-directed discourse shows clearly that the provision of negative evidence in the form of recasting does not interrupt the communication between parent and child, but rather is incidental to it.

Given that recasting is frequent in child language acquisition and that the preliminary findings from the child language studies indicate that such recasting has an effect on the subsequent development of the features that were recast for the child by the parent, both experimental and classroom SLA studies have begun to examine the efficacy of recasting in child and adult SLA. For example, it has been demonstrated that not only is recasting (among other types) a frequent feature of child NS-NNS task discourse (25% overall), but that the child NNSs are able to use the information provided in the recasts in their own subsequent utterances (about 35% of the time) (Oliver, 1995). Furthermore, in adult L2 classrooms, it has been observed that between one quarter and one third of all teacher feedback is corrective feedback, regardless of task type and that teachers seem to prefer and employ frequently two response types: correction of utterances with one error only & topic continuation after learner utterances with no errors (Doughty, 1994a).

¹⁶ Adults have also been shown to repeat well-formed child utterances but not to repeat child ill-formed utterances (Demetras, Post, & Snow, 1987).

Recasts are appealing as a focus-on-form technique, in particular, because they satisfy Long's requirement of unobtrusiveness of the pedagogical intervention into the communicative activity. Furthermore, this line of research is quite promising because the findings of experimental as well as the classroom studies appear to converge. To provide an example of this complementary research approach, three representative studies will be discussed in some detail. The first is an experimental study of the effects of recasting vs. the provision of models, the second is a classroom study comparing the effects of recasting with a control treatment, and the third is another experimental study which addresses a question left open by the classroom study. The overall research question of the three studies was essentially the same: Are learners able to perceive and use implicit negative feedback (i.e., recasts) during task-based communication? Although, as described earlier, it has been shown that children notice and use recasts, it has often been claimed that learners do not recognize the differences among the various kinds of teacher discourse moves (Allen, Swain, Harley, & Cummins, 1990; Lyster, 1998). This may be because, in comparison with parental recasting, teachers respond far more often to learner utterances (classically taking every other, thus fifty percent of all, turns in the classroom interaction), and often do not tailor their responses to utterances with only one error (as do parents). It is, therefore, not surprising that SLA researchers have been cautious about the effectiveness of teacher feedback. Accordingly, recent studies have sought ways to enable learners to notice the intent of the teacher feedback while not resorting to metalinguistic comment. The manner in which this is accomplished in the three studies discussed here involves the restriction of feedback to one or two learning problems and the provision of feedback whenever such learning problems arise during communicative activities.

The first experimental study which demonstrates the effectiveness of such targeted recasting is the recent work by Ortega and Long (1997) who have shown that recasts are superior to models (and to a control treatment) in promoting (at least the short-term) acquisition of adverb placement in Spanish as a foreign language. The subjects in the study engaged in an activity in which they directed the researcher to describe objects in a scene according to taped prompts which were given to subjects via headphone and then reiterated by subjects. The following example contrasts a model with a recast.

(4) Model:

Prompt:	Elena toma a veces café.
NNS:	(repeats) Elena toma a veces café
NS:	(noverbal response: nods)

Recast:	
Prompt:	a veces
NNS:	Elena toma café a veces
NS:	Elena toma a veces café, si? Mmhm

The results of this study revealed no learning by the control group and statistically significantly higher posttest scores on adverb placement for the students who heard recasts of utterances involving adverb placement than for those who received models. More than half of the subjects who improved were also able to place novel adverbs accurately on the posttest.¹⁷ Furthermore, in a debriefing interview, when asked if they had learned anything new, half of the students in the recast condition were able to formulate and explain the Spanish adverb order rule correctly and explicitly.

Although the findings of the experimental recasting study are indeed encouraging, there are two drawbacks to this research: there was no delayed posttest, and the treatment was delivered one-on-one under highly controlled conditions, thereby reducing the ecological validity of the findings. However, the findings have been independently corroborated by a nonequivalent control group design classroom study which incorporated the same principles of targeting one or two L2 features and providing recasts for nearly every learner error (Doughty & Varela, 1998). More specifically, in order to investigate whether or not a task-natural and mainly incidental focus on form would be feasible and effective in a content-based (thus primarily meaning-focused) classroom context, Doughty and Varela formed a researcher-classroom teacher team and attempted to implement focus on form into an ESL science class. Because the primary aim of these classes was the teaching of the science curriculum, this was an ideal context for the implementation of an implicit focus-on-form technique.

In designing the materials and procedures for this study, the teacher observed her own class for a period of two weeks in order (a) to take note of her student's interlanguage for a period of time so that a feature of English could be identified for which the majority of students could potentially benefit from a push to target accuracy and (b) to recommend a task that could be used to embody the focus-on-form research by providing a natural and essential context for the use of the form (Loschky & Bley-Vroman, 1993). Consequently, focus on form was operationalized in this study as frequent recasts, targeting past time reference in the oral and written reporting of science experiments. Every time the

¹⁷ This study was, in fact, far more complex than is discussed here. Two features were targeted, but only one was acquired. The second feature—topicalization word order—was probably too advanced for the subjects who participated in the study. See Ortega and Long (1997) for further details.

learners made an error in the targeted form, the teacher (Varela) would either (a) repeat the error with rising intonation to call the learner's attention to the problem and then provide a recast (see example 5) or (b) simply recast (see example 6), in each case without further comment or interruption to the science work being carried out by the students.¹⁸

(5) Corrective recasting

- S: I think the worm will go under the tissue.
 T: You *think* the worm *will* go under the tissue?
 S: no response
 T: You thought the worm would go under the tissue.

(6) Simple recasting

- S: I think the worm will go under the tissue.
 T: Oh, you thought the worm would go under the tissue.

Feedback of one type or the other was provided whether the students were working individually, in groups or altogether with the rest of the class. A parallel form of feedback was provided on all written work for which the teacher would circle the error and provide the written recast. Other comments on the lab reports pertained only to the scientific content, and students were asked to revise the reports based on all of the teacher comments. No other errors were corrected during the five weeks of the study.

Gain scores from pre- to posttests of the oral and written science reporting showed a significant advantage on three oral measures and three written measures for the focus-on-form group in comparison with a control group, which had followed the regular science curriculum without any pedagogical intervention on their expression of past time. Results of a delayed posttest administered two months later revealed that the findings held on five of the six measures. Thus, it appears that recasting in the context of a meaningful science curriculum was effective in promoting both accuracy and increased attempts at past time reference. As is the case in parental recasting of child utterances, ESL learners who were intent on carrying out and reporting on science experiments were nonetheless able to attend to, notice, and incorporate the FonF as revealed by their increased accuracy in expressing past time.

¹⁸ In the case of example 5, it should be noted that the corrective recasting is somewhat more overt than was the recasting in the Ortega and Long (1997) experiment.

However, given the two types of recasts, corrective and simple, that were employed by Varela in content-based science class, the question was left open as to whether one, the other, or the combination of these focus-on-form techniques was the source of the experimental effects. To tease apart the potential benefits of corrective versus simple recasting, Doughty, Izumi, Maciukaite, and Zapata (1999) utilized a modified version of the controlled experimental design of the Ortega and Long (1997) study, but added a fourth condition inspired by the Doughty and Varela (1998) work as well as a delayed posttest.¹⁹ Specifically, the study compared the effects of models, recasts, and what were termed focused recasts (equivalent to corrective recasting) on the acquisition of L2 Spanish word order. 53 intermediate level learners of Spanish were randomly assigned to one of the four conditions: control, model, recast, or focused recast, as shown below. Examples for adverb placement word order are given, however the study also targeted topicalization as had been done by Ortega and Long (1997).

(7) **Control** Received a placebo treatment not focused on the target orders:
discussion of working conditions for Latin American women

(8) **Model**

Prompt on tape: Juan bebe la leche los sábados
NNS: (repeats) Juan bebe la leche los sábados
Researcher: Mm hmm

(9) **Recast**

Prompt on tape: los sábados
NNS: Juan bebe la leche los sábados
Researcher: Juan bebe los sábados la leche, sí? Mm hmm

(10) **Focused recast**

Prompt on tape: los sábados
NNS: Juan bebe la leche los sábados
Researcher: Bebe la leche los sábados?
Juan bebe los sábados la leche, sí? Mm hmm

¹⁹ Other modifications included lengthening of the assessment measures, use of familiar vocabulary items, and increased contextualization of the grammaticality judgement task.

Comparing (5) and (6) discussed earlier with (9) and (10) above, shows that the recast and focused recast conditions independently operationalized the two kinds of recasts that were employed in tandem naturalistically by Varela in the classroom study. Results of this study can be interpreted in terms of (a) pretest to posttest improvement, (b) whether or not any gains were maintained on the delayed posttest, and (c) whether or not there were any delayed effects (i.e., no immediate improvement seen on the posttest, but improvement from pretest to delayed posttest). Thus, for each group, there are eight measures of potential gain (two word order types: adverb placement and topicalization; two measures for each word order type—production and grammaticality judgement; and two assessment times—at posttest and at delayed posttest). The focused recast and recast groups were clearly superior to the model and control conditions, showing significant improvement on six of the eight and five of the eight measures respectively, in comparison with only two for the models and no change at any time for the control group. The focused recast group appears to do slightly better than the recast group, and further analyses revealed more influence of the focused recasts on the more difficult word order, topicalization (see Doughty et. al., 1999, for details).

In sum, recasts, which occur naturally in many contexts of negotiation of meaning, have now been demonstrated to be effective when employed as a focus-on-form pedagogical intervention (see Long, 1999, for review). Furthermore, taken together, the findings of the metalinguistic reflection task (dictogloss), the interaction enhancement, and especially the converging findings of the experimental and classroom recasting studies suggest very strongly that, when learners are already engaged in the negotiation of meaning, focus on form is effective in bringing about the IL restructuring which is somehow not facilitated when learners are solely intent on accomplishing tasks and not pushed toward accurate production. In fact, this comparison has been given further, explicit support in another recent experimental comparison of the benefits to learners of negotiation alone vs. negotiation plus intensive recasting (Mackey & Philp, 1998). The latter proved to be more effective in influencing the interlanguage development of question formation than was negotiation of meaning alone.

CONCLUSION

In this paper, we have considered the evolution of L2 negotiation from its precursors in input and interaction research, to a detailed analysis of the negotiation of meaning, to a critical analysis of the inadequacies of unassisted negotiation with respect to learner accuracy, and finally to the effectiveness of several techniques exemplifying the

supplemental pedagogical intervention known as focus on form. We have seen it well documented that NNS learners work their way out of communication breakdowns by negotiating meaning with their interlocutors and that the proven result of their efforts is greater comprehension of NS or other learner input and greater comprehensibility of their own output. Whether greater comprehension or comprehensibility during unassisted negotiation of meaning always lead to successful SLA is not at all clear based on the research to date, but this seems to be unlikely. On the other hand, focused pedagogical interventions such as interaction enhancement and recasting, have been shown to be effective in promoting SLA. Nonetheless, it is important to note that an essential component of these focus-on-form techniques is that learners must be engaged in negotiating meaning at the time of the pedagogical intervention. In this way, the direction of learner focal attention to specific problematic forms appears to overcome the haphazard approach that learners and their interlocutors take on their own as they engage in linguistic problem-solving.

REFERENCES

- Allen, P., Swain, M., Harley, B., & Cummins, J. (1990). Aspects of classroom treatment: Toward a more comprehensive view of second language education. In B. Harley, P. Allen, J. Cummins, & M. Swain (Eds.), *The development of second language proficiency*, (pp. 57-81). New York: Cambridge University Press.
- Biesty, S. (1992). *Incredible cross sections*. New York: Alfred A. Knopf.
- Bohannon, J., & Stanowitz, L. (1988). The issue of negative evidence: Adult responses to children's language errors. *Developmental Psychology*, 34(5), 684-689.
- Brown, R., & Hanlon, C. (1970). Derivational complexity and order of acquisition in child speech. In *Cognition and the development of language*, edited by J. Hayes. New York: Wiley and Sons.
- Bruner, J. (1978). Acquiring the use of language. *Canadian Journal of Psychology*, 32(4), 204-218.
- Bruner, J. (1995). The autobiographical process. *Current Sociology*, 43(2/30), 161-178.
- Demetras, M., Post, K., & Snow, C. (1987). Feedback to first language learners: The role of repetitions and clarification requests. *Journal of Child Language*, 13(2), 275-292.
- DiPietro, R. (1987). *Strategic interaction: Language learning through scenarios*. Cambridge: Cambridge University Press.
- Doughty, C. (1992). Does negotiation contribute to language acquisition? Michigan State University: Paper presented at the Second Language Research Forum.
- Doughty, C. (1994a). *Finetuning as Focus on Form. Paper presented at the Symposium, Focus on Form—What is It? (C. Doughty, convenor)*. Montreal: McGill and Concordia Universities.
- Doughty, C. (1994b). Finetuning of feedback by competent speakers to language learners. In J. Alatis (Ed.), *GURT 1993: Strategic Interaction*, (pp. 96-108). Washington, DC: Georgetown University Press.
- Doughty, C. (1996a). *SLA through conversational discourse*. Paper presented at the Annual Conference of the American Association of Applied Linguistics, Chicago.
- Doughty, C. (1996b). Unpublished transcripts, Georgetown University.
- Doughty, C., & Pica, T. (1986). Information-gap tasks: Do they facilitate SLA? *TESOL Quarterly*, 20(2).
- Doughty, C., & Varela, E. (1998). Communicative focus on form. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition*, . Cambridge: Cambridge University Press.

- Doughty, C., & Williams, J. (Eds.). (1998a). *Focus on form in classroom second language acquisition*. Cambridge: Cambridge University Press.
- Doughty, C., & Williams, J. (1998b). Pedagogical choices in focus on form. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom SLA*, (pp. 197-262). Cambridge: Cambridge University Press.
- Doughty, C., Izumi, S., Maciukaite, S., & Zapata, G. (1999). Recasts, focused recasts, and models: Effects on L2 Spanish word order. Paper presented at the Second Language Research Forum, University of Minnesota, September, 1999.
- Farrar, M. (1990). Discourse and the acquisition of grammatical morphemes. *Journal of Child Language*, 17(3), 607-624.
- Farrar, M. (1992). Negative evidence and grammatical morpheme acquisition. *Developmental Psychology*, 25(1), 62-75.
- Fraser, C., Bellugi, U., & Brown, R. (1963). Control of grammar in imitation, comprehension and production. *Journal of Verbal Learning and Verbal Behavior*, 2, 125-135.
- Galloway, L., & Richards, P. (1994). *Input and language acquisition*. Cambridge: Cambridge University Press.
- Gass, S., & Varonis, E. (1989). Incorporated repairs in NNS discourse. In M. Eisenstein (Ed.), *The dynamic interlanguage* (pp. 71-86). New York: Plenum.
- Gass, S., & Varonis, E. (1994). Input, interaction and second language production. *Studies in Second Language Acquisition*, 16(3), 283-302.
- Gregg, K. (1984). Krashen's monitor and Occam's razor. *Applied Linguistics*, 5, 79-100.
- Harley, B., & Swain, M. (1984). The interlanguage of immersion students and its implications for second language teaching. In A. Davies, C. Cripe, & A. Howatt (Eds.), *Interlanguage* (pp. 291-311). Edinburgh: Edinburgh University Press.
- Hatch, E. (1978). Discourse analysis and second language acquisition. In E. Hatch (Ed.), *Second language acquisition: A book of readings*, (pp. 401-475). Rowley, MA: Newbury House.
- Hatch, E., Flaschner, V., & Hunt, L. (1986). The experience model and language teaching. In R. Day (Ed.), *Talking to Learn*, (pp. 5-22). Rowley, MA: Newbury House.
- Krashen, S. (1977). The monitor model for adult second language performance. In M. Burt, H. Dulay, & M. Finocchiaro (Eds.), *Viewpoints on English as a second language*. New York: Regents.
- Krashen, S. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon.

- Krashen, S. (1985). *The input hypothesis: Issues and implicatons*. London: Longman.
- Larsen-Freeman, D., & Long, M. (1991). *An introduction to second language acquisition theory and research*. London: Longman.
- Lightbown, P. (1992). Getting quality input in the seond and foreign language classroom. In C. Kramsch & S. McConnell-Ginet (Eds.), *Text and context: Cross-disciplinary and cross-cultural perspectives on language study*. Lexington, MA: D.C. Heath.
- Lightbown, P., & Pienemann, M. (1993). Comments on Stepehn D. Krashen's "Teaching issues: Formal grammar instruction." *TESOL Quarterly*, 27(4), 717-722.
- Long, M. (1980). Input, interaction and second language acquisition. Unpublished Ph.D. thesis, UCLA.
- Long, M. (1983). Linguistic and conversational adjustments to non-native speakers. *Studies in Second Language Acquisition*, 4(2), 177-193.
- Long, M. (1985). Input and second language acquisition theory. In S. Gass & C. Madden (Eds.), *Input in second language acquisition*. Rowley, MA: Newbury House.
- Long, M. (1989). Task, group and task-group interactions. *University of Hawai'i Working Papers in ESL*, 8, 1-26.
- Long, M. (1991). Focus on form: A design feature in language teaching methodology. In K. d. Bot, C. Kramsch, & R. Ginsberg (Eds.), *Foreign language research in crosscultural perspective* (pp. 39-52). Amsterdam: John Benjamins.
- Long, M. H. (1999). Recasts: The story so far. Paper presented at the AILA conference. Tokyo, August. To appear in M. H. Long (2000), *Problems in SLA*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Long, M., & Robinson, P. (1998). Focus on form: Theory, research, and practice. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition*, (pp. 15-41). Cambridge: Cambridge University Press.
- Loschky, L. (1994). Comprehensible input and second language acquisition. *Studies in Second Language Acquisition*, 16(3), 303-323.
- Loschky, L., & Bley-Vroman. (1993). Grammar and task-based methodology. In S. Gass & G. Crookes (Eds.), *Tasks and language learning* (Vol. 1, pp. 123-167). Clevedon: Multilingual Matters.
- Lyster, R. (1998). Recasts, repetition and ambiguity in L2 classroom discourse. *Studies in Second Language Acquisition*, 20(1), 51-81.
- Mackey, A. (1995). Stepping up the pace: Input, interaction and interlanguage development. An empirical study of questions in ESL. Unpublished doctoral dissertation, Linguistics Department, University of Sydney.

- Mackey, A. (1999) Input, interaction and second language development. *Studies in Second Language Acquisition*, 21(4), 557-587.
- Mackey, A., & Philp, J. (1998). Conversational interaction and second language development: Recasts, responses, and red herrings? *Modern Language Journal*, 82(3), 338-356.
- Muranoi, H. (in press). Integrating formal instruction into a communicative task in EFL classrooms. To appear in *Language Learning*, 50(4).
- Muranoi, H. (1996). *Effects of interaction enhancement on restructuring of interlanguage grammar: A cognitive approach to foreign language instruction*. Unpublished Ph.D. thesis, Georgetown University.
- Oliver, R. (1995). Negative feedback in child NS-NNS conversation. *Studies in Second Language Acquisition*, 17(4), 459-482.
- Ortega, L., & Long, M. H. (1997). The effects of models and recasts on object topicalization and adverb placement in L2 Spanish. *Spanish Applied Linguistics*, 1(1), 65-86.
- Pica, T. (1991). Classroom interaction, participation and comprehension: Redefining relationships. *System*, 19, 437-452.
- Pica, T. (1994). Research on negotiation: What does it reveal about second language acquisition? *Language Learning*, 44(3), 493.
- Pica, T., & Doughty, C. (1985). Input and interaction in the communicative language classroom: A comparison of teacher-fronted and group activities. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 115-135). Rowley, MA: Newbury House.
- Pica, T., Doughty, C., & Young, R. (1986). The impact of interaction on comprehension: Do interactional modifications help? *International Review of Applied Linguistics*, 72, 1-25.
- Pica, T., Holliday, L., Lewis, N., Berducci, D., & Newman, J. (1991). Language learning through interaction: What role does gender play? *Studies in Second Language Acquisition*, 13(3), 343-377.
- Pica, T., Holliday, L., Lewis, N., & Morgenthaler, L. (1989). Comprehensible input as an outcome of linguistic demands on the learner. *Studies in Second Language Acquisition*, 11(1), 63-90.
- Pica, T., Kanagy, R., & Falodun, J. (1993). Choosing and using communication tasks for second language research and instruction. In G. Crookes & S. Gass (Eds.), *Task-based learning in a second language*, (pp. 9-34). Clevedon, Avon: Multilingual Matters.

- Pica, T., Young, R., & Doughty, C. (1987). The impact of interaction on comprehension. *TESOL Quarterly*, 21, 737-758.
- Polio, C. & Gass, S. (1998). The role of interaction in native speaker comprehension of non-native speaker speech. *Modern Language Journal*, 82(3), 308-319.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11(2), 17-46.
- Schmidt, R. (1992). Psychological mechanisms underlying second language fluency. *Studies in Second Language Acquisition*, 14, 357-385.
- Schmidt, R. (in press). The centrality of attention in SLA. In P. Robinson (Ed.), *Cognition and second language instruction*. Cambridge: Cambridge University Press.
- Scollon, R. (1976). *Conversations with a one year old*. Honolulu: University of Hawaii Press.
- Slobin, D. (Ed.). (1985). *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum.
- Slobin, D. (Ed.). (1992). *The crosslinguistic study of language acquisition*. (Vol. 3). Hillsdale, NJ: Lawrence Erlbaum.
- Snow, C., & Ferguson, C. (1977). *Talking to children*. Cambridge: Cambridge University Press.
- Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Rowley, MA: Newbury House.
- Swain, M. (1995). Three functions of output in second language learning. In G. Cook & B. Seidlhofer (Eds.), *Principle and practice in applied linguistics* (pp. 125-144). Oxford: Oxford University Press.
- Swain, M., & Lapkin, S. (1989). Canadian immersion an adult second language teaching: What's the connection? *Modern Language Journal*, 73(2), 150-9.
- Swain, M., & Lapkin, S. (1995). Problems in output and the cognitive processes they generate. *Applied Linguistics*, 16(4), 370-391.
- Teichroew, R. (1982). Receptive vs. productive vocabulary: A survey. *Interlanguage Studies Bulletin*, 6(2), 3-33.
- Vygotsky, L. (1962). *Thought and language*. Cambridge: MIT Press.
- White, L. (1987). Against comprehensible input. *Applied Linguistics*, 8(2), 95-110.
- Zuengler, J. (1993). Encouraging learners' conversational participation: The effect of content knowledge. *Language Learning*, 43(3), 403-432.
- Zuengler, J., & Bent, B. (1991). Relative knowledge of content domain: An influence on native-non-native conversations. *Applied Linguistics*, 12(4), 397-415.

Catherine Doughty
Department of ESL
1890 East-West Road
Honolulu, HI 96822

cdoughty@hawaii.edu