Review Article

Research on Negotiation: What Does It Reveal About Second-Language Learning Conditions, Processes, and Outcomes?

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This article reviews insights into second-language (L2) learning that have been revealed through over a decade of research on the social interaction and negotiation of L2 learners and their interlocutors, beginning with the seminal work of Hatch (1978a, 1978b) and Long (1980 et passim), and with reference to a corpus of informal, experimental, and classroom data from published studies. This research illustrates ways in which negotiation contributes to conditions, processes, and outcomes of L2 learning by facilitating learners' comprehension and structural segmentation of L2 input, access to lexical form and meaning, and production of modified output. The research points out areas in which negotiation does not appear to assist L2 learning, especially with respect to the learner's need to access L2...
grammatical morphology and to strive toward accurate production of L2 morphosyntax. Directions are suggested for future research on negotiation and L2 learning through longitudinal study, experimental design, and task-based collection of data.

In 1978, Evelyn Hatch made a pivotal and indelible mark on the field of second language acquisition (SLA) through her publication of two seminal papers on language learning and interaction (Hatch, 1978a, 1978b). With these papers, still widely cited, the importance of interaction in language learning, once overlooked or at best taken for granted in SLA theory, became a major focus of debate and discussion therein. By inviting and indeed challenging researchers to look toward interaction for insight into second language (L2) development, Hatch called for a brand-new approach to research. She encouraged a reversal of assumptions on the nature of the learning process, as she urged researchers to turn their attention away from questions about how L2 structure led to the learner's communicative use of L2, and instead to examine how the learning of L2 structure evolved out of communicative use.

Fortunately, many researchers have continued to take on Hatch's charge. Over the years, 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. This term has been used to characterize the modification and restructuring of interaction that occurs when learners and their interlocutors anticipate, perceive, or experience difficulties in message comprehensibility. As they negotiate, they work linguistically to achieve the needed comprehensibility, whether repeating a message verbatim, adjusting its syntax, changing its words, or modifying its form and meaning in a host of other ways.

Negotiation is not the only way in which the interaction between learners and their interlocutors can be modified or restructured. For example, the flow of their interaction can be interrupted by a correction or rerouted to a new topic. These two
ways of modifying interaction have also been studied with respect to their possible contributions to the learning process. But negotiation, with its emphasis on achieving comprehensibility of message meaning—both that provided to learners and that provided by them—has sparked and sustained considerably more interest in the field of SLA.

Of course, interest in language-learner interaction in general and negotiation in particular did not begin with Hatch, nor with SLA research for that matter. In a number of the incarnations that the communicative approach to teaching has taken, methodologists have made the assumption that language learning takes place through interaction, and have designed curricula accordingly. (See reviews in Howatt, 1984; Kelly, 1969; Richards & Rodgers, 1986; Yalden, 1983; and chapters throughout the recent collection on task-based learning, Crookes & Gass, 1993a, 1993b.)

In addition, sociolinguists have often looked at interaction and negotiation among nonnative speakers (NNSs) and interlocutors for what these processes revealed about the social roles and responsibilities of this relationship (see Gumperz, 1964, 1970). Indeed the term negotiation was used extensively in other fields before its adoption by SLA researchers, most of whom cite Garfinkle (1967) as their primary source in this area (see, e.g., Scarcella & Higa, 1981).

What made Hatch’s view so special, however, was her notion that interaction could also be used as a basis for examining the linguistic and cognitive features of the L2 learning process, not just the social ones. She also made it clear from the outset that what was found could not necessarily be applied to decisions about classroom methods. We needed “to ‘apply with caution,’” as the title of one of her early papers reminded us (Hatch, 1979). As Hatch was careful to point out, moreover, finding connections between interaction and SLA was easier said than done. For one thing, a more obvious role of the exchanges between learners and interlocutors was for learners to “check out the vocabulary” (Hatch, 1978b, p. 431) and to foreground background information; their role in syntax building was not immediately apparent.1
Further, Hatch (1978b, pp. 432-433) noted that the work needed to draw out connections between interaction and SLA could be messy, keeping researchers at the level of observation, impression, and anecdote. As she suggested, researchers might be able to provide interesting samples of data, but such data could lack the scope and consistency needed to shed light on whether, and if so how, language-learner discourse played a fundamental role in language learning conditions, processes, and outcomes.

Much observation, anecdote, and interpretation have indeed emerged from the study of language-learner interaction. Fortunately, a good deal of the anecdotal material has been compelling and has contributed a wealth of descriptive data. These data, together with those from some more focused studies, have contributed a good deal of information on how L2 learners interact socially, linguistically, and ever so variably with native-speakers (NSs) as well as with other learners. (See books by Allwright, 1988; Chaudron, 1988; Ellis, 1985b; Larsen-Freeman & Long, 1991; van Lier, 1988 for review chapters; the edited volumes of Day, 1986; Fine, 1988; Gass & Madden, 1985; and recent state-of-the-art papers by Long, 1992, and Wesche, in press.)

What might have been a messy task has actually been handled with a great deal of consistency, responsiveness, and responsibility by SLA researchers. They have developed theoretical models and frameworks to examine connections between the properties of social discourse and the processes of L2 learning, often to test current SLA theories as well as to propose new ones. These studies have kept alive not only questions about the role of interaction in the learning process, but also more fundamental questions about the learning process itself. (For illustrative, but by no means exhaustive work, see, e.g., Chaudron, 1983a, 1983b, 1986; Crookes & Rulon, 1985; Duff, 1986; Early, 1985; Ellis, 1985a, 1987; Gass & Varonis, 1984, 1985a, 1985b, 1986, 1989; Lightbown, 1983; Long, 1980, 1983, 1985a, 1985b; Pica, 1991, 1992; Pica, Doughty, & Young, 1986; Pica, Holliday, Lewis, Berducci, & Newman 1991; Pica, Holliday, Lewis, & Morgenthaler 1989; Pica, Young, & Doughty, 1987a; Porter, 1986; Sato, 1986; Varonis & Gass, 1982, 1985a, 1985b.)
The seminal work of Michael Long has enriched and guided this research all along. As early as 1980, Long investigated the social discourse of NNSs and their NS interlocutors, and identified the work that the NS and NNS do to avoid and repair impasses in their conversational discourse. At the time, he called this work interactional modification (see Long, 1980, 1981, 1983). Later Long and others also referred to it as negotiation (see, e.g., Gass & Varonis, 1985, 1986; Larsen-Freeman & Long, 1991, Scarcella & Higa, 1981; Varonis & Gass, 1985a, 1985b).

Various labels have been applied to its component features. In his earlier writing, Long (1980) referred to them as clarification requests, confirmation checks, and comprehension checks, which he then sorted into the broader categories of strategies, which had to do with speakers' utterance planning, and tactics, which related to utterance repair (Long, 1981). Yet another set of labels was applied by Varonis and Gass (1985a, 1985b). They referred to clarification requests and confirmation checks as indicators, produced because a preceding utterance had served to trigger them. Later, Pica et al. (1989) and Pica et al. (1991) argued that labels such as clarification requests, confirmation checks, and indicators implied that the researcher could identify a speaker's intentionality even though this was seldom the case. They therefore substituted the term signals for those listener utterances in reaction to a trigger utterance from the speaker. Varonis and Gass (1985a, 1985b) also referred to pushdowns and popups in the course of learners' negotiations, these having more to do with turning points in the overall structure of learners' interactions than with utterances directed toward message comprehensibility.

Whatever labels are used, these features of negotiation portray a process in which a listener requests message clarification and confirmation and a speaker follows up these requests, often through repeating, elaborating, or simplifying the original message. Such features, although prevalent throughout NS-NS social discourse, are nevertheless significantly more abundant among NS-NNS, even more so during NNS-NNS interaction (see Long, 1981; Varonis & Gass, 1985a, 1985b, respectively).
Examples of NS-NNS negotiation from Long's research are provided below. Here, as well as in the excerpts to be discussed later, the various checks, requests, and questions of negotiation will be referred to as signals. Shown in italics throughout the excerpts, signals may be viewed as utterances made by one interlocutor to the other that greater message comprehensibility is needed. (Responses to signals are shown in boldface). Such needs may be apparent in the listener's encoding of the signal, through open-ended questions such as *What did you say?* or *X? What do you mean by X?* or through requests for confirmation such as *Did you say X?* Such a need might also be inferred from the speaker's responses to the listener's signal, in which the speaker repeats the original message for the listener, reduces or increases its length, substitutes new words, eliminates old ones, or modifies the message in a range of other ways.

In Example 1, for instance, all or part of the NNS contribution of *But uh but uh we take a break . . . break time . . . thirty minutes* has served as a trigger for the NS to signal *at ten thirty you take a break?* Although this signal was not exactly what the NNS had said initially, it did provide a context for the NNS to respond, (as shown in bold here and in the excerpts to follow) by segmenting and repeating part of the original message. This, in turn, led to a series of signal-response exchanges in which eventually, both the time of the NNS *BREAK* and its duration were communicated effectively.

1. **NNS:** But uh but uh . . . we take we take a break . .
   **NS:** oh
   **NNS:** You know thirty minutes
   **NS:** oh
   **NNS:** Break time
   **NS:** oh good
   **NNS:** thirty minutes
   **NS:** *At ten thirty you take a break?*
   **NNS:** *Thirty minutes*
   **NS:** *Right When do you take the break? At ten thirty?*
   **NNS:** *Uhm . ten fifteen*
NS: Ten fifteen
NNS: ten fifteen From ten fifteen to ten fifty-five
NS: Ten forty-five
NNS: Ah ten forty-five
NS: Right right Have you seen Los Angeles?

In Example 2, the NNS signal, pardon me, brought forth an
NS response that elaborated and paraphrased much of the original
utterance. And in Example 3, the NNS signal what? what you say?
also brought forth a NS modified response, one characterized by
word and phrase substitution, in which by yourself was replaced
with alone, and the original reference to here was made more
specific through to the states.

2. NNS: There has been a lot of talk lately about additives
and preservatives in food. In what ways has this
changed your eating habits?
NS: Uh, I don’t eat that many foods with preserva-
tives, anyway even before all the talk.
NNS: Pardon me?
NS: I don’t eat uh, canned foods or foods that
have preservatives.
(Gass & Varonis, 1985b, p. 50)

3. NS: so you came here by yourself or did you come with
friends?
NNS: no no I—what? what you say?
NS: did you come to the states with friends or
did you come alone?
NNS: no, alone—from Toronto (Picà, 1987, p. 5)

As these excerpts reveal, negotiation can serve as a means of
working through perceived or actual gaps in communication. Less
obvious are the ways in which it can assist language learning. This
is perhaps because negotiation research has focused primarily on
language learning conditions rather than outcomes. Thus, re-
searchers have given less attention to identifying a direct impact
for learners’ negotiation on restructuring of their interlanguage
grammar than to documenting the contributions of negotiation in
bringing about conditions claimed to be helpful for SLA, namely
learners' comprehension of L2 input, their production of modified output, and their attention to L2 form. As will be illustrated below, in additional selections of negotiation and through statistical data from the research from which these selections were taken, there is a growing body of empirical evidence for the contributions of negotiation to these three conditions, and a good deal of theoretical argument as well. This theoretical background is addressed in the following section as a preliminary to a review of the empirical support.

Theoretical Perspectives on Conditions for SLA

The six theoretical perspectives on conditions for SLA discussed in this section fall into two broad categories. Three relate to what learners need to do to learn a language and three are more focused on what needs to be done with the L2 for it to be learned. Each will be addressed somewhat separately in this section, but what will become more evident in later sections of this paper is that the various conditions are highly interrelated, both within and across their respective categories.

Learner-Oriented Conditions

Of the first group of learner-oriented conditions, the one most widely espoused is that: (1) comprehension of message meaning is necessary if learners are to internalize L2 forms and structures that encode the message. Thus, exposure to L2 input is not sufficient for learners to be able to access and internalize the L2 rules, forms, and features. This input must be made comprehensible if it is to assist the acquisition process (see, e.g., Krashen, 1980, 1985; Long, 1980, 1983, 1985a, 1985b).

Adding to this argument, Swain (1985) has claimed that: (2) learner production of modified output is also necessary for L2 mastery. She noted that it is possible to understand the meaning of an utterance without reliance on or recognition of its morphology or syntax; however, to produce an utterance that can be
understood often requires specific morphology and syntax to convey its meaning. This, she speculated, might be why the spoken production of Canadian immersion students has been found to lag behind their listening comprehension. Even though, presumably, these learners have been given large amounts of comprehensible input, this is not sufficient for the learning. Swain proposed therefore that they might need to be given opportunities to produce comprehensible output; that is, to organize and restructure their output syntactically. Swain thus views learners' modification of their output as a vehicle for them to attend to their interlanguage grammar and thereby manipulate it in creative, complex, and ultimately more target-like ways. (See Swain, 1985, for a more detailed exposition of this argument.)

Both comprehension and modified production are tied closely to learners' attention to L2 form, with comprehension seen (particularly by Krashen, 1983, 1985) as the "entrance requirement" for access to form, and modified production as a context for learners to draw on their current system of interlanguage forms. Indeed, learners' awareness of form in L2 input is currently held to play a much more crucial role in successful SLA than was assumed. This view is reflected in yet another theoretical claim that: (3) attention to L2 form is needed as learners attempt to process meaningful input (Long, 1990; Rutherford & Sharwood Smith, 1985; Schmidt, 1990; Sharwood Smith, 1991) and attempt to master structural features that are difficult to learn inductively because they are relatively imperceptible in L2 input or overlap with structures in the learner's L1 (see Lightbown & Spada, 1990; White, Spada, Lightbown, & Ranta, 1992).

The claim that L2 form must come to learners' attention as they process input also harkens back to Swain's (1985) argument regarding the importance of production as a more direct means than comprehension for learners to focus on form. For Swain, learners' production of output, especially their modification thereof, draws their attention to the L2 structures that make it possible for them to convey message meaning. A more likely theoretical variation, however, is that during output production learners'
attention is focused on the form of their own interlanguage system rather than the form of the L2 they wish to acquire.

**Language-Oriented Conditions**

The next set of claims about L2 learning conditions, as noted above, centers on language processes or, more specifically, input processes. The arguments here overlap a good deal with the theoretical claims on learner-oriented conditions, especially with respect to their underlying assumptions and research base. They simply offer another perspective on the same set of conditions for L2 learning.

First among this second set of claims is the argument that: (1) positive L2 input—that is, input that is grammatically systematic—must be available to serve the learning process. SLA theories all assume that learners draw on L2 input as data for their learning. Any debate seems to be over the nature of such data and over whether and how the data must be organized for language learning to proceed—for example, to allow learners to imitate and respond to linguistic stimuli, to adjust innate structures, to recognize restrictions on lexis, to discover rules through hypothesis testing, and so forth.

Another language-centered claim is that: (2) enhanced L2 input, which makes subtle L2 features more salient for learners, can assist their learning processes. Of particular benefit is input that provides information to help learners identify which forms can occur in the L2 and which cannot (Sharwood Smith, 1991). Along similar lines, it is held that: (3) feedback and negative input are needed to provide learners with metalinguistic information on the clarity, accuracy, and/or comprehensibility of their interlanguage (Schachter, 1983, 1984; 1986, 1991) and with structural information that may help them notice non-target-like forms in their interlanguage that are difficult to detect from positive input alone (Lightbown & Spada, 1990; White, 1991; White et al., 1992). Both (2) and (3) are variations on their more learner-centered version, (3) above, which argues for learners' need to focus on L2 form to master the L2 system.
To illustrate the relationship of negotiation to learners' comprehension of L2 input, their production of modified output, and their access to L2 form, the following overview will present results of several studies that have documented negotiation's positive effect on these processes.

Negotiation as an Aid to L2 Comprehension

There is considerable evidence for the role that negotiation plays in bringing about comprehension, an important factor in language learning. Indirect evidence has come from studies such as those by Chaudron (1983b) and Long (1985a). Here, English L2 learners could better comprehend and recall lecturette content when the words and sentences in the original versions of the lecturettes were modified in ways that negotiation has been shown to generate. These modifications included repetitions—at the word, phrase, and sentence level, the use of paraphrase, and the insertion of conjunctions and enumerators to mark relationships of time and space.

Evidence of a more direct relationship between negotiation and comprehension has come from Pica et al. (1987a), who investigated the listening comprehension of 12 low-intermediate, preacademic learners as they followed 30 different directions to a picture assembly task under two input conditions. In one condition, the researchers first modified the direction utterances in ways similar to those used in the lecturette research described above. Three female NSs, who were graduate students and speakers of standard American English, then presented them orally to individual learners. Among the modifications in these directions were reductions in syntactic complexity (from 1.20 clauses per sentence in the original directions to 1.02 in the premodified) and repetitions and rephrasings of direction content (from means of .20 content word repetitions and 16.47 total words per each original direction to means of 7.20 content word repetitions and 33.47 total words for each premodified direction).

In the other condition, the direction input was not premodified,
but instead left in its original form, then presented by the same, respective NSs during interaction with a matched group of learners. As often as possible, the NSs encouraged the learners to ask for clarification of the directions (but not physical assistance with carrying them out). An illustrative excerpt of what took place in this second, negotiated input condition is shown in Example 4, and will be discussed later in this section. Here, as noted in previous excerpts, signals of negotiation are italicized. Responses to these signals are provided in boldface.

4. NS: [Initial, unmodified NS directions] Moving to the top right corner, place the two mushrooms with the three yellow dots in that grass patch down toward the road. [Directions during negotiation] Should I repeat it?

  NNS: *mmm*

  NS: OK. Moving to the top right corner, place the two mushrooms with the three yellow dots in that grass patch down toward the road.

  NNS: *Um what means grass patch?*

  NS: *A piece of grass*

  NNS: *Piece of grass, piece of grass*

  NS: Should I repeat it again? OK. Moving to the top right corner, place the two mushrooms with the three yellow dots in that grass patch down toward the road.

  NNS: *I can't understand*

  NS: OK. The top right corner of the picture.

  NNS: *mmm*

  NS: Place the two mushrooms, the two mushrooms with the three yellow dots in the grass patch down towards the road

  NNS: *mm*

  NS: What's the problem? Do you have a question? I can help.

  NNS: *um, on the—on the right? left?*

  NS: *On the top right corner of the picture*

  NNS: *Top... top right right top corner*

  NS: in the grass patch down towards the road, place the two mushrooms
NNS: two mushrooms
NS: OK?... All right.

(Pica, Young, & Doughty, 1987b)

As reported and discussed by Pica et al. (1987a), both the premodified and the negotiated input conditions enhanced the learners' comprehension, which for this study was operationalized as the number of directions carried out accurately. However, the negotiated input was significantly better in aiding direction comprehension. Thus, the mean comprehension score of the 6 learners in the premodified input condition was 69% and that for the 6 learners in the interactionally modified condition was 88% (t=3.78, p<.05). Further, a related, classroom-based study involving the same assembly task found that, among two comparable classrooms of learners, participants who witnessed their classmates negotiate over the initially unmodified directions were able to comprehend them as well as did participants who engaged in the actual negotiation (Pica, 1991). Thus, when it comes to comprehension, negotiation appears to be a powerful commodity; even learners' being allowed only to observe negotiation can improve their comprehension.

Analyses of the language used during negotiation in these studies uncovered the same kinds of manipulations of L2 lexis and structure that were made to the premodified directions. However, these arose spontaneously in negotiation and there were significantly more of them. Thus, content word repetition increased from its initial mean of 0.20 per direction to a mean of 13.17 as a result of negotiation (compared to the increase to 7.20 per premodified directions). Further, the mean number of total words per direction increased from 16.47 to 51.64 (compared to an increase to 33.47 in the premodified).

These negotiated modifications in direction length and redundancy are typified in Example 4 above. Here, content words such as mushrooms, dots, and grass were frequently repeated and rephrased into longer stretches of direction input. These modifications were also part of a general phenomenon whereby the direction input was broken down or segmented into more processible units, which was particularly apparent when the learners asked
open-ended questions. Typically, the NS responded by segmenting the direction utterances into individual words and short phrases, and repeating them or providing greater detail.

Thus, as illustrated in Example 4, the NS took a direction such as moving to the top right corner, place the two mushrooms with the three yellow dots in that grass patch down toward the road, and extracted content words such as two mushrooms, three yellow dots, and grass patch, as she defined them or offered a fuller description to assist the learner. When the learner asked about the meaning of grass patch, for example, the NS extracted grass and put it into the more comprehensible piece of grass.

This suggested that the input modifications of negotiation, although directed toward successful communication of the direction meaning, were often accomplished through segmentation of the direction structure, done in ways that helped draw learners' attention to L2 form. This possible link between negotiation and the processing of L2 form serves to extend the work of negotiation beyond that of helping learners with comprehension of message meaning, and thus to make negotiation a potentially powerful contributor to other dimensions of the L2 learning process. Such contributions will be discussed in the following section.

Negotiation, Comprehension, and Access to Form

The research findings reported above corroborate what has been found from Long's (1980) early work to more recent research by Holliday (1993) on the nature of input during negotiation: that input modifications are significantly more abundant during negotiation than during the rest of learners' interaction. The findings also provide further evidence that negotiation modifies the L2 in ways that help learners comprehend its meaning. This perspective on negotiation is highly restricted, however, and places negotiation in a secondary role in L2 learning, because it sees comprehension of meaning as the principal way to access and internalize L2 form, and negotiation as simply a way, albeit it a very good way, to bring comprehension about.
Looking at negotiation in this light makes negotiation important for SLA only insofar as comprehension is important to SLA. This is unfortunate, because the role of comprehension in SLA has become increasingly controversial. As a number of researchers have argued (e.g., Chaudron, 1985; Færch & Kasper, 1987; Gass, 1988; Sharwood Smith, 1987; White, 1988), it is difficult to find a direct relationship between comprehension of meaning in L2 input and the internalization of L2 forms that the learner aims to acquire.

The most popular view on such a relationship is typified by much of the work of Krashen (e.g., 1980, 1985). According to Krashen, comprehension of meaning suffices to enable learners to access the forms and structures that encode that meaning. It is not clear, however, what process makes this happen, and, as a number of researchers have pointed out, Krashen himself has not been consistent about this. (See Chaudron, 1985; Long, 1990; Schmidt, 1990; Schmidt & Frota, 1986; among others.) As Chaudron (1985) has noted, for example, Krashen (1983) proposed that learners might access L2 form by noticing differences between forms in their current level of competence and those in whatever input they comprehended. In most of his other writing, however, Krashen (1980, 1985) has said that the process of accessing form through comprehension does not take place on so conscious a level. From either of Krashen's perspectives, however, the direct connections between comprehension of meaning and acquisition of form place negotiation in a learning sequence in which it simply initiates L2 comprehension, whereas comprehension then serves as the catalyst for more direct L2 learning experiences. In such a sequence, negotiation can lead to comprehension of meaning, but it is comprehension of meaning that leads to a focus on, and eventually acquisition of, L2 form.

A different sequence is equally likely, however, given the great number of opportunities that can arise during negotiation to draw learners' attention to both message meaning and L2 form. In this alternative sequence, the opportunities to hear a message repeated, segmented, and reworded during negotiation are what
make it possible for the learner to process the message and to comprehend its meaning. Negotiation data seem to suggest, therefore, that learners' comprehension of meaning can be the result of their access to L2 form rather than its precursor.

A perspective on negotiation as directly influencing the learning of L2 structures and forms fits well with negotiation data. Too much manipulation of form has been observed during the negotiated process of making L2 input comprehensible to learners (and, as will be shown below, during learners' attempts to make their output comprehensible to NSs) to afford negotiation only a secondary role in the learning process. Further, as suggested in portions of the excerpts thus far, as well as in some of those that follow, learners' and interlocutors' negotiating does not always lead to their immediate comprehension of meaning but does get them to manipulate form. This twofold potential of negotiation—to assist L2 comprehension and draw attention to L2 form—affords it a more powerful role in L2 learning than has been claimed so far.

Other examples of how negotiation can draw attention to form have been revealed in studies of learner-NS interaction in which the focus is on both learners' comprehension and their production of message meaning. Two areas of interest here are the feedback on the learners' message form that negotiation can trigger and the modification in message form with which learners and NSs can respond. Negotiation's role in assisting learners' access to form will be discussed in the following sections, as excerpts from two additional studies on learner-NS interaction are presented and analyzed.

Beyond Comprehension

That negotiation can help learners with assistance more than comprehension of L2 input was shown in two studies on NS-learner interaction, which have been described in detail in previous papers (Pica et al., 1989, Pica et al., 1991). These studies focused not only on the linguistic modifications in the input that the NSs provided as they and learners engaged in information exchange
tasks, but also on the feedback that the learners were given and the modified output they produced on these tasks. Illustrations of the role played by negotiation with respect to these three areas can be found throughout the excerpts of negotiation below. These have been taken from the 2,361 negotiation utterances generated by the learners and NSs who participated in the studies. Of these negotiation utterances, 558 and 675 were NS signal and response utterances, respectively, and 578 and 550 were respectively learner signal and response utterances. The excerpts have appeared elsewhere, as noted following each.

The participants were 32 low-intermediate, preacademic L2 English learners, all speakers of Japanese L1, and 32 NSs of standard American English, including students, skilled workers, and professionals. They worked as same-sex and cross-sex NS-learner dyads on four oral communication tasks. One of the tasks required one member of dyad to draw, and then describe, a picture for the other to replicate. A similar task required them to reverse these roles for the same assignment. Another task engaged dyads of learners and NSs in replicating unseen, researcher-supplied picture sequences, for which each held equally pertinent information. A final task involved the dyads in exchanging opinions about the possible contributions of these tasks to their language learning.

For each task, the data reveal numerous opportunities for learners to attend to L2 form in their negotiations with the NSs. For example, when the learners signaled difficulty in understanding the NSs, the NSs often repeated and reformulated their original utterance for the learners. Similarly, when the NSs signaled that they could not understand the learners, the latter often gave these signals back as L2 reformulations of their own interlanguage utterances. Opportunities for the learners to attend to their own interlanguage form were also abundant: for example, when portions of their interlanguage utterances were repeated back to them in the NSs’ signals. Such opportunities also arose when the learners signaled the NSs and responded to them, particularly with signals that provided interlanguage versions of
the NS utterances and with responses that modified their own original productions. How this attention to form was accomplished and the implications it had for L2 learning are discussed in the following sections, as excerpts of the negotiations and supportive statistical data are reviewed.

Negotiation and Input for Learning

Learners and interlocutors negotiate to repair breakdowns in communication or ensure mutual comprehension of meaning. Therefore, many of the speech modifications used to make input comprehensible can be considered lexical ones, in that words unfamiliar to the learner are repeated, replaced, or defined in isolation from the longer segments in which they were initially uttered.

As noted above, other modifications, however, are structural, in the sense that portions of utterances are segmented and often relocated to another constituent position—for example, from object in an initial utterance to subject in a follow-up utterance. These segments can be uttered either as new phrases that can function on their own or in conjunction with a paraphrase, synonym, or other types of lexical modification. Thus, of the 675 NS utterances of response to learner signals in our data, 226 (33%) were purely lexical, but 241 (36%) involved a modification to the initial structure.

Much of the time, the structural modification consisted of simple segmentation of an initial utterance, so that a portion of an utterance was extracted and repeated on its own. This pattern can be seen in the NS response in Example 5, in which the NS extracted the phrase *a chimney on the left* from his initial sentence. In Example 6, there is both segmentation and relocation of a portion of the NS initial utterance, as *carport* was moved from object of *have* to subject of *is*. The NS response utterance in Example 7 displays segmentation with additional structural change, here in grammatical morphology for *-s* plural, as well as lexical modification through description.
5. NS: there's a chimney on the left
   NNS: What?
   NS: a chimney on the left (Pica, 1992a)
6. NS: you have a carport on the left side?
   NNS: left side?
   NS: the carport is on the left side.
      (Pica, 1992a)
7. NS: and then another window over bushes I think
   NNS: bush?
   NS: sort of bush, I think it's supposed to be a
       bush (Pica, 1992a)

And in Example 8, the learner signal regarding three black windows was interpreted (correctly) by the NS as the apparent need to have garage segmented, moved from object of have to subject of is, and then defined and described.

8. NS: and I have a garage on the side with three little
      black windows
   NNS: three black windows?
   NS: you know what a garage is?
   NNS: no
   NS: um, it's attached to the house. It's a building attached to the house in which you keep your cars and called a garage, OK, so it looks like a big house and a little house, but they're attached
   NNS: Oh, it's a small house.
   NS: Uuhuh
   NNS: Uuhuh, and black roof?
   NS: Uuhuh
   NNS: Yeah, oh, maybe, let's see, yeah, I understand.
      (Pica, 1992a)

Again, in Example 9, the NS's structural modification segmented a portion of his original utterance and repositioned it in his response. As shown, the NS segmented hinges and moved it from its original position as object of has to subject position in the phrase hinges hold it together. The meaning of hinges was also supplied as the NS added hold it together. Here again, negotiation gave the learner information about the meaning of hinges as well as its structural possibilities as verb object and subject.
9. NS: The door has hinges.
   NNS: *Hinges? I don't know what that means.*
   NS: *Like hinges hold it together*
   NNS: *Uuh*

   (Pica, 1993, p. 440)

   And in Example 10, when the learner asked about *tree*, *tree* was then segmented from the NS original message and repositioned in right dislocation in the NS response. The NS also gave information about the meaning of *pointed*—it had to do with the *top of the tree*.

10. NS: *Is the rest of the tree pointed?*
    NNS: *Tree?*
    NS: *Is it pointed on top? the tree?*

    (Pica, 1992a)

   Even when learners misanalyze NS input in their signals, the NS response can offer helpful segmentation. This can be seen in Examples 11 and 12. In Example 11, for instance, the learner asked about *buvdaplate* as though it were a specific lexical item, unknown to her. Through negotiation, however, she discovered that *buvdaplate* was actually a prepositional phrase whose meaning she already knew. This was accomplished as the NS extracted *above* from the original prepositional phrase *above the plate*. The learner was then able to echo back this original phrase and the NS continued with a further description of the picture to be drawn.

11. NS: *I have a piece of toast with a small pat of butter on it*
    NNS: *hm hmm*
    NS: *and above the plate*
    NNS: *what is buvdaplate?*
    NS: *above*
    NNS: *above the plate*
    NS: *yeah not up as if you are sitting at the table*
    NS: *it would be farther away from you than the plate*
    NNS: *hm hmm*

    (Pica, 1992b, p. 225; Pica, 1993, p. 440)

   And in Example 12, the learner asked about *rectangular* and *rectangle* as well as *square except*. In all three signals, the NS
described the features of a rectangle, attending to its meaning. In response to the signal *square except*, an incorrect reanalysis by the learner, the NS also drew the learner's attention to its form. He did this by segmenting *square except* from his prior utterance. He then repositioned *except*, using it to connect a *square*, as object of *is* in the first sentence of his response, to a *square*, as subject of *has* in his following sentence.

12. NS  it's a rectangular bench
   NNS: rectangular?
   NS: yeah it's in the shape of a rectangle with um you know a rectangle has two long sides and two short sides
   NNS: rectangle?
   NS: re—rectangle it’s it’s like a square except you you flatten it out
   NNS: square except
   NS: uh a rectangle is a square
   NNS: uhh
   NS: except a square has four equal sides
   NNS: yes
   NS: a rectangle has two sides that are much longer and two sides that are much shorter
   NNS: OK  (Pica, 1993, p. 437)

Whether or not the learner noticed these structural changes cannot be determined from the data, but their frequent occurrence suggests once again that negotiation as a process not only emphasises communication of message meaning, it also provides an opportunity to focus on message form. Research on the role of negotiation in supplying feedback and in providing learners with opportunities to modify their output further substantiate this.

Negotiation as a Source of Feedback to Learners and a Context for Their Modification of Output

That negotiation offers learners more than assistance with comprehension of L2 input is made quite clear when analysis extends beyond the input learners are given to the output they
produce. As noted above, when learners use their interlanguage resources to communicate with NSs, they set up a basis from which they can be given feedback on their production—the meaningfulness of its content, the processibility of its form, or both. As a result, the learners modify an original message toward greater comprehensibility, often adjusting its form. Thus, through feedback, negotiation brings learners' attention to L2 versions of their interlanguage utterances and heightens their awareness of their own interlanguage system.

**NS Signals as Feedback to Learners**

In the current database, modification to the sounds and structures of learners' interlanguage was found in 263 of the NS signal utterances—47% of the total 558. Such feedback can be found in Example 13, for instance, in which the NS asked for confirmation of the learner's production of big while segmenting it from the learner's original utterance and repronouncing it in a more target-like way. Similarly, in Example 14, the NS gave the learner crossed to compare with closed, and in Example 15, the NS asked about the learner's verb drew, while using its more contextually appropriate infinitive form.

13. NNS: this country like bik  
   NSL: big?  
   NNS: yeah  
   (Pica, 1993, p. 440)

14. NNS: the windows are crozed  
   NS: the windows have what?  
   NNS: closed  
   NS: crossed? I'm not sure what you're saying there-  
   NNS: windows are closed  
   NS: oh the windows are closed oh OK sorry  
   (Pica, 1992a)

15. NNS: but I didn't know how drew so we are very confused  
   NS: to draw?  
   NNS: yeah  
   (Pica et al., 1989, p. 89)

Other signal utterances contained more elaborate modifica-
tions of form. In Example 16, for instance, the NS signal offered the learner an L2 version that focused on differences in both form and meaning by: segmenting tree from the learner’s utterance, making it the subject of the NS’s sentence, modifying it with the plural -s morpheme, and substituting branches for stick.

16. NNS: and tree with stick  
   NS: you mean the trees have branches?  
   NNS: yes (Pica, 1992a)

Learner Signals to NSs and
Segmentation of L2 Message Structure

The modifications that learners made in their signals and responses to signals were similar to those in the signals and responses of the NSs. As were the NSs’ output modifications, the learners’ responses were distributed across lexis and structure, with simple structural segmentation predominating over lexical modification. This probably reflects the learners’ limited linguistic resources for performing much modification beyond extracting recognizable forms from the NS input.

Thus, of the 578 learner signals to NSs, 352 (61%) involved simple structural segmentation as shown in Examples 17, 18, and 19 below. Most of the other signals (13%) were either open questions, such as What?, which did not involve modification, or lexically modified versions of what the NS had said (9%). Taken together, these data indicated that learner signals focused primarily on the structure of NS utterances, and that in signalling about NS message meaning, the learners were particularly sensitive to smaller segments of NS input.

17. NS: are they facing one another?  
   NNS: Facing?  
   NS: um are the chairs at opposite ends of the table or—  
   NNS: yeah (Pica, 1993, p. 440)

18. NS: you have a carport on the left side?  
   NNS: left side?
NS: the carport is on the left side.  
(Pica, 1992a)

19. NS: we got a plant.
NNS: plant?
NS: yeah, um it's kind of like a fern, has a lot of big leaves; it's in a pot.  
(Pica, 1992a)

_Learner Responses to NSs as Production of Modified Output_

Analysis of the data revealed that many learner responses to NS signals also contained some kind of structural modification. Typically, what learners did was to segment portions of their initial utterances and use them to form their responses. Thus, of the 550 learner responses, 148 (27%) involved structural modification, and of these structurally modified utterances 83 (56%) were characterized by simple segmentation or by segmentation accompanied by another type of linguistic modification. This was shown in Example 14 above, in which the NS requested clarification of the learner's message by repeating most of the learner initial message, but inserting _what?_ for the part of the message he could not understand. The learner was also given _crossed_ to compare with _closed_. That the learner's attention was focused on this form was shown as he segmented _windows_ from the initial utterance, but then incorporated the repronounced version of _closed_ into his response.

In distinction to the frequency and consistency of modification in NS responses to learner signals, the modification in learner responses was less frequent and was influenced considerably by the type of signal used by the NS. Thus, NS signals drew responses from learners that also modified message meaning and form, but this was twice as likely to occur if the NS signal was an open question such as _What?_ or _huh?_ or _Can you tell me what that means?_ than if it was a repetition or modification of the learner's message. This can be seen, for instance, in Example 20, in which the learner elaborated about _patton_ (albeit unsuccessfully) in response to the NS open signal.

20. NNS: we have common _patton_ in this case
A very different, but more typical type of response was shown earlier in Examples 13, 15, and 16, in which the learners simply said *yeah* or *yes* to the NS interpretation of their message, rather than attempt their own. Thus, modification in learners' responses was not inevitable, but instead dependent on the type of NS signal used. This differed from the somewhat unrestrained use of modification by NSs responding to learner signals, such as in Examples 6, 7, 10, 17, 18, and 19. (See Pica, 1992; Pica, Lewis, & Holliday, 1990 for a fuller discussion; and Pica, Lincoln-Porter, Paninos, & Linnell, in preparation, for supportive, more focused research.)

Negotiation and SLA: Research Issues and Directions

Given negotiation's many apparent contributions to L2 learning, it may seem difficult to understand why we do not take greater advantage of negotiation and really push for it—as teachers in our classrooms, as SLA researchers, and in our own experiences as language learners. Yet there are many reasons, both methodological and social, not to do so.

First, negotiation must be looked at candidly. The emphasis in this paper so far has been on what negotiation can do for L2 learning; it is important to look as well at what negotiation has not been able to do. The recent proliferation of writing on SLA theory helps researchers begin to understand why no one experience, activity, or endowment can account for all of L2 learning. On this basis alone, negotiation cannot be really counted on, any more than anything else can be counted on, as the be-all and end-all of L2 learning.

This aside, a more specific explanation lies in negotiation's focus. Negotiation, by definition, focuses on the *comprehensibility*
of message meaning, and on the message's form only insofar as that can contribute to its comprehensibility. Learners and their interlocutors find ways to communicate messages through negotiation, but not necessarily with target-like forms.

Further, negotiation seems to work most readily on lexical items and larger syntactic units. Negotiation over grammatical morphology is rare, at least on the various communication tasks that have been studied to date (Pica, Kanagy, & Falodun, 1993). Even asking learners and their interlocutors to tell stories, sequence events, or explain procedures in their tasks does not get them to negotiate much over time and aspect marking. Instead, they give greater attention to the people in their pictures and stories—what they look like, their shapes, sizes, and so forth—than to what the people are doing. So the learners segment and move larger units of syntax such as sentence elements, for example, but do little else. These findings do not mean that learners and interlocutors cannot negotiate over verb tense and aspect, but that many of the communication activities in which they participate—both in research and in everyday life—do not demand their attention to these areas of grammar.

Certainly learner variables come into play. As Pienemann (1989) has shown, if learners are not ready for a new word, form, or rule, they cannot acquire it, and thus negotiation will not help toward its internalization. The interplay of L2 code and discourse also plays a role. As Sato (1986) has argued and shown, discourse constraints are often such that learners do not need much morphosyntax to communicate with their interlocutors. Further, many features of language used in communication are barely detectable, impossible for learners to attend to. This may be why researchers such as White et al. (1992) have been successful in assisting SLA through enhanced L2 input, highlighting relatively imperceptible linguistic units, complex rules, or features that are difficult for learners to differentiate from those in their L1.

Negotiation must also be put into critical perspective from a social point of view. Although common to many aspects of social discourse, negotiation needs to be balanced by the smooth flow of
even exchange. As Aston (1986) has argued, too many impasses and repairs can make for uneasy social relationships. Too many clarification questions can be downright annoying.

Besides, no one yet agrees on how to measure the impact of negotiation on the internalization of L2 knowledge: Should researchers use grammaticality judgments? L2 use in context? spontaneous use in communication? change over time? Before casting aside negotiation as a key factor in the learning process, researchers need to agree on what constitutes L2 learning. Most research has taken a process approach toward characterizing L2 learning through negotiation, but if negotiation's role in learning is to be tested more fully, an outcome approach will be necessary as well.

Related to the matter of specifying learning outcomes are matters of research design. SLA researchers must ask whether they have been investigating negotiation in ways that tap into its total potential for assisting L2 learning. We cannot expect definitive answers from naturalistic studies that focus on interaction in a variety of learning contexts but not negotiation per se. Yet there is little else to turn to. Longitudinal research by Sato (1986) and Schmidt and Frota (1986), for example, has shed much light on L2 learning processes. However, because their students participated in negotiation as one of many different types of interaction in their daily lives, one cannot identify the influence—or lack thereof—that negotiation might have had on their learning.

Especially important, two experimental studies, focused largely on negotiation, have shown it has positive, short-term effects on L2 learning. Doughty's (1988, 1992) work on English L2 relative clause learning and Loschky's (1989) on locatives in Japanese have used negotiation to provide an inundation of these formal structures to L2 learners. Their positive results for learning outcomes reveal a great deal about what negotiation can do when put to the test.

In Doughty's (1988, 1992) research, deliberate and heightened contexts for negotiation enabled learners to be given modified input that was rich in relative clauses. This may be the very route
that must be taken in studying negotiation's effect on learning. Such treatment may not seem "natural" or socially acceptable, but we should not overlook how highly effective it was for Doughty's participants in the short term. We still have little idea of what intensive negotiation can do for learning outcomes, especially if the learner were ready to learn a particular L2 feature. But this certainly deserves more studies than Doughty's promising contribution.

In addition, it increasingly appears that experimental studies may best lead to important insights into what negotiation can do for L2 learning. With respect to analyses of negotiation data, tremendous challenges lie ahead. As noted earlier, these data show how learners' attention can be brought to differences between their own production and a target model. However, we must emphasize can, because negotiation data seldom obviously show whether or not learners perceive these differences. Overall, we can safely say that negotiation provides learners with opportunities to attend to L2 form and to relationships of form and meaning. Whether they indeed do cannot be observed, or even inferred, most of the time. This may not reflect a fault of negotiation, but rather the current state of research instruments.

So where is research with respect to language learning through negotiation? Again, thanks to Hatch (1978a, 1978b, 1979) and Long (1980, 1981, 1983, 1985a, 1985b, 1990, 1992) and the rich line of research they inspired, we know that negotiation, as a particular way of modifying interaction, can accomplish a great deal for SLA. It can help make input comprehensible to learners, help them modify their own output, and provide opportunities for them to access L2 form and meaning. However, we need greater insight into how it is connected to learning outcomes.

We also badly need more experimental studies comparing the effects on L2 learning outcomes of interaction with negotiation and that without negotiation. These studies should use tasks designed to tap into grammatical modifications—in itself, not so easy. They then should be followed up with long-term, very focused experimental studies: also not an easy chore, and one with its own
logistical and financial problems. Perhaps such research can be done in classrooms, using approaches similar to those of Lightbown, Spada, and White (see Lightbown & Spada, 1990; White, 1991; White et al., 1992). This, however, will require a different sort of classroom than researchers and research consumers have been used to.

Research on classroom interaction has already shown why there is so little negotiation in the language classroom context, much of it related to matters of teacher and student power, to traditions in language teaching, and to expectations about the language classroom (see discussion in Pica, 1987). There is also the possibility that the drive to promote in the classroom discourse which resembles that found outside it has provided learners with tasks that get them to talk to their teacher and to each other but not to ask the kinds of questions about form and meaning that will really deliver L2 data to them. Clearly, newer tasks are needed for both classroom learning and classroom research. (See Loschky & Bley-Vroman, 1990, 1993; Crookes & Gass 1993a, 1993b, for promising new directions in this area.) Any progress on these fronts will accomplish a great deal not only for SLA research, but also for classroom methods, and for the learners whom they are intended to serve. Much work still needs to be done on the study of language learning through negotiation, but it is work that will sustain the liveliness and curiosity of those who participate in the field of SLA as teachers, learners, and researchers.

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Notes

1 I thank an anonymous reviewer for pointing this out to me.
2 In this article, the terms learner and NNS reflect the ways in which the researchers cited have characterized their participants. However, the use of the term learner by the present author reflects her current perspective on the participants in her studies, as L2 learners who are also NNSs of English L2.
References


