The age of the NSs who participated in the research ranged between twenty and thirty-five, with the median age of approximately twenty-five years. They came from a variety of academic and employment contexts, but were predominantly graduate and undergraduate students, skilled workers and professionals, from middle and upper-middle class backgrounds. To add to the uniformity among the NSs, both mothers and persons experienced in dealing with NNSs were excluded from data collection.

Among the subjects were 17 male and 15 female Japanese LI speakers learning English L2 and 12 male and 20 female native speakers of American English. Their highly individual and exceedingly complicated schedules for work and study prevented their random assignment to experimental groups. Therefore, based on their availability for tape recording, they were arranged by the researchers into the following dyads: Ten same gender dyads, consisting of 5 Female NSs-5 Female NNSs, 5 Male NSs-5 Male NNSs and 10 cross-gender dyads, consisting of 5 Female NSs - 5 Male NNSs and 5 Male NSs-5 Female NNSs.

The larger number of total subjects (52) than members of dyads (40) reflects the task-oriented approach to data collection that has been used throughout the research. Four different communication tasks have been used in order to provide a sample of subjects' speech and patterns of interaction when given different degrees of control over the information needed to carry out each task. The tasks, which have been described in previously published research (See, e.g., Pica et al , 1989, in press) and are summarized below, were two picture-drawing tasks referred to as Information Gap 1 and Information Gap 2, a collaborative task, known as the Jig-Saw task, and an Opinion Exchange task.

Three of the communication tasks (Information Gap 1, Jig-Saw, and Opinion Exchange) had been used to collect data on ten female NSs and 5 male and 5 female NNSs in an earlier study (Pica et al , 1989) Data on one more task (the Information Gap 2 task) was required in order extend the research and address further questions on negotiation. It was therefore necessary to include additional NS and NNSs on this task. In combining the earlier and additional subjects into the ten same and ten cross gender dyads under study, the NNSs subjects were matched according to their TOEFL scores. Data for these matched subjects were combined into composite dyads, and their TOEFL scores were averaged together.

Although there were differences between the groups of subjects who participated in the earlier and additional collections of data, similarities between these groups so greatly outnumbered their differences that combining their data for research

purposes seemed justified. These differences and similarities have been described in detail in Pica et al (in press). Among the various reasons for combining the data, perhaps the most crucial was that when the NNSs' TOEFL scores were weighted according to the distribution and number of tasks in which they engaged within a composite dyad, the TOEFL means of 452.3 for the Female NNSs and 450.7 for the Male NNSs which were not much different from the respective unweighted means of 455.4 and 455.1. This finding, along with the many additional similarities across the dyads, suggested that the groups from both the earlier and additional data collections could be combined for purposes of the present study.

Each subject dyad, whether participating in all four communication tasks or a portion of the tasks, engaged in two rounds of each task, distributed randomly to control for the possible influence on results of task ordering or practice effects. The researchers introduced the subject dyads to each other and reviewed instructions for taping. The dyads then worked independently of the researchers during the tasks. These dyadic interactions were audiotaped. Only data from the second round of tasks were transcribed, coded, and analyzed.

Three communication task types and four tasks altogether were used in data collection. As noted above, the tasks were designed to provide subjects with different degrees of control over the information that was necessary to reach the goal of the task. It was believed that as they needed to request or supply information, the subjects would adjust their speech to reach mutual understanding and that therefore these tasks would provide a suitable context for the study of negotiation and variation therein.

Task materials and procedures included:

(1)   Two Information Gap tasks in which the NNS and NS interlocutors were asked to take turns, one drawing and then describing an original picture, the other replicating the picture, based solely on the drawer's descriptions and comments and follow-up responses to the replicator's questions. Neither was allowed to look at the other's picture as it was being described. In the Information Gap 1 task, the NNSs were asked to draw their picture and then describe it to the NSs. In the Information Gap 2 task, the NSs were asked to draw and describe for the NNS.

(2)   A Jig-Saw task, which required the NNS and NS interlocutors to reproduce an unseen sequence of pictures by working collaboratively and exchanging their own uniquely held portions of the sequence.

(3) An Opinion Exchange task, in which the NNSs and NSs were asked to share their opinions on the ways in which the preceding tasks may have contributed to language learning. This task, with its more open-ended, divergent goals, was designed to give both interlocutors potentially equal control over information.

Approach to Data Analysis

The following framework (found in complete form in Pica et al, in press) was developed to identify and distinguish instances of learner - interlocutor negotiation, provide a basis for the analysis of negotiation features, and determine their usefulness as data for L2 learning. It was based on earlier frameworks by Varonis and Gass (1985), Long (1980, 1983, 1985), and others. Earlier versions of this framework were used in a series of studies (including Pica, 1987; Pica et al , 1989), with inter-coder agreement ranging from .92 to .97. In the current version of the framework, used in Pica (in press b), Pica et al (in press), and Pica, Lewis, and Holliday (1990), inter-coder agreements ranged from .88 to 1.00.

As will be shown in the following discussion, the current version of the framework differs from those which preceded it in its effort to move beyond looking at negotiated interaction with respect to the opportunities it provides learners for comprehension of L2 input and production of modified output. Instead, the framework focuses on negotiation as a source of L2 data -- data on L2 forms and on relationships between L2 forms and meanings and L2 forms and structures. The three main categories of utterances which constitute negotiation are listed at the top of the framework and are as follows: a signal utterance which indicates a lack of understanding of a preceding utterance, which latter then becomes labelled the trigger, and an utterance of response to the signal made by the producer of the trigger. To close off the negotiation, there is an utterance or utterances which indicate that mutual comprehension has occurred or is not possible to achieve, or that the negotiation has ended and the interaction is moving forward to a new or related topic or back to a previous one. Throughout the negotiation, either the NS or NNS interlocutor can signal that the other's message is not clear or is not understood, and each interlocutor therefore can produce a trigger, respond to a signal, and close off the negotiation with utterances of comprehension, non-comprehension, or follow up.

Negotiation Signals:

Signals and responses have a wide range of linguistic features which can serve as a source of L2 data. The signalling utterances of negotiation can be open - ended

questions, statements, phrases, or words which do not in themselves incorporate the trigger (as in 2a), but often indicate that clarification of the trigger is needed. Signals can also be exact repetitions of the trigger (as in 2b). The signals shown in (2c) modify the trigger in a variety of ways: Modification can be lexical, e.g., through synonym substitution or paraphrase as in signal (2c1); inflectional, through addition, deletion or substitution of grammatical morphology (2c2); and/or structural, as in (2c3) and (2c4). These latter two types of modified signals are made by first segmenting one or more elements of the trigger, then either relocating them (e.g., moving a noun object of the trigger to a noun subject in the signal) as in (2c3), producing them in isolation as in (2c4), or incorporating them into a longer utterance, again as in (2c4). From the viewpoint of the signal producer, a (2c4) signal can be considered a partial repetition and therefore a sub-category of (2c2); however, it has been put into its own category in light of its potential role in providing structural data to the signal receiver.

The modifications in each signal utterance can occur individually or in combination. Thus it is possible to find a signal utterance in which one part of the trigger is segmented while another part is segmented, then moved. This would be considered a combination of (2c3) and (2c4). Or a signal utterance might segment part of the trigger and paraphrase another part, producing a combination of (2c3) and (2c1). Note, for example, the NS Signal in (2c1) on the Framework, reproduced in (8) below:

(8)   **N N S**   **N S**

       children they visit uncle few day   they will stay with their uncle a week?
       (trigger)   (2c1 + 2c3 signal)

Here the NS (2c1) signal substitutes *stay* for the NNS *visit_* and *a week* for the NNS *few day*. Within the same signal, the NS also moves *uncle* from its NNS use as object of the verb *visit* to object of the preposition *with*, Thus the signal also functions as a (2c3) type.

When produced by the NS, the signalling utterances of displayed in the Framework might serve a variety of purposes. The open-ended signals of (2a) alert the NNS to the possibility that something in the interlanguage needs to be clarified. They provide an opportunity for NNSs to turn to their own interlanguage resources and modify their output (a pattern also shown in research of Pica et al , 1989). However,

(2a) signals offer little explicit data about the L2 and do not in themselves supply the data through which this can be done.

The signals of (2b) provide NNSs with opportunities to hear their own interlanguage production and, as such, might provide a basis on which they can compare the interlanguage as produced in relatively spontaneous or unplanned communication and the interlanguage which they now have time to monitor more carefully in responding to the NS signal. The signals of (2c1) - (2c4) offer learners a modified, L2 version of their interlanguage trigger which might provide opportunities for them to compare all or part of what they have just expressed in their interlanguage and to notice how their intended meaning might be expressed in the L2.

On the other hand, as noted above, even if differences are noticed, it may be difficult for learners to tell whether the L2 encoding the signal is providing a corrected or more target-like version of the interlanguage trigger or merely an alternative one. Since negotiation is by definition, oriented toward mutual comprehension of message meaning, NS signals do not guarantee a direct way for learners to recognize whether the various signal modifications are alternative ways of saying what they have just tried to say in their trigger or whether these modifications are corrections or more target-like versions of same. To do this, the signals would need to contain explicit cues to that effect, i.e., that the NNS has expressed meaning in a non-target-like manner.

Negotiation Responses:

NNSs and NSs can respond to each others' signals in ways such as those shown in Responses (3a) - (3g). For example, they can respond with (3a), a switch to a new or related topic, with (3b), a repetition of their initial trigger or with (3c), a repetition of their interlocutor's signal. They can also respond with (3d), a modification of the trigger or (3e), a modification of their interlocutor's signal.[2] These modifications can be made in the same ways that were shown for signal modification, i.e., modification can be lexical (3d1) or (3e1), morphological (3d2) or (3e2), or structural, as in (3d3), (3d4), (3e3), and (3e4). Again, from the viewpoint of the response producer, (3d4) and (3e4) could have been considered partial repetitions and therefore sub-categories of (3b) or (3c); however, they have been categorized separately in light of the structural modification such response types bring out.

As was the case for signals, the modifications in (3d1) - (3d4) and (3e1) - (3e4) can occur by themselves or in combination. This is shown, for example, in the

morphological and lexical changes made between the NS Trigger and NS Response in (3d2), reproduced from the Framework in (9) below:

(9)   **NNS**   **NS**

                                            the children are visiting their uncle for
                                            a few days (trigger)

       what? (2a signal)   the children have gone to visit their
                                            uncle's home for a day or two (3d1 +
                                            3d2 response)

Here the NS deleted the morphological endings on *visit* and *day*, and adds the possessive morpheme -s to *uncle*. The NS also paraphrased *a few days* with *a day or two*. Thus the single utterance of response contained two modifications, a morphological modification of (3d2) as well as a lexical modification of (3d1).

When NSs respond to NNS signals, through repetition and modifications of their L2 trigger utterances, with (3d1) - (3d4) and (3e1) - (3e4) responses, they reveal to NNSs data on L2 forms, relationships of form and meaning, and structural patterns of morpheme affixation and segmentation and movement of L2 elements. NS exact repetitions of their trigger (3b) make L2 input salient and provide another "shot at L2 input" for the learner (See Chaudron 1985 for discussion of this concept). Or such NS responses of repetition -- and indeed any NS responses with linguistic adjustment to the same propositional content of the initial NS trigger -- may simply give learners a "time out" or break as they keep their attention fixed on the trigger. Further, such lexically or structurally modified responses which retain the NS underlying meaning of the trigger in the re-encoding of the response, might draw learners' attention to relationships of L2 form and meaning considered so crucial for L2 internalization.

Responses of (3f) and (3g), which simply confirm the signal or indicate an inability to respond to it, are believed to sustain or alter the flow of interaction. However, they do not, in themselves, modify the L2 input. Finally, to close the negotiation, the NS or NNS can either (4a) indicate comprehension or non-comprehension or (4b) move on to a new, related, or recycled topic.

Analysis of NS-NNS Negotiation Data

Thus far, two levels of analysis have been used on the negotiation data collected from the subjects. The first analysis focused on the quantity of negotiation signals and responses in relation to the gender pairing of the NSs and NNSs and the

initial distribution of and control over information among them as it varied across the tasks. Briefly, what was found was that interaction between NNSs of both genders with female NSs brought about greater amounts of negotiation, particularly on the two information-gap tasks. These findings have have been reported in Pica et al (in press).

In the second level of analysis, the NS signals and responses were examined in ways that would reveal the extent to which these utterances might supply their NNS interlocutors with data on L2 lexis and structure, and how this, too, might be affected by gender pairing and information distribution and control. Two questions were addressed: (1) whether and, if so, how signal and response utterances provided learners with L2 data for language learning, and (2) how any of the data that were identified in (1), were influenced by the gender-pairing of the NSs and NNSs and by the distribution of and control over information provided within the tasks in which they participated.

Preliminary results of data analysis for questions (1) and (2) have been reported in Pica (1991). The analysis of the negotiation data presented below will be focused on question (1); more detailed analysis of the data for question (2) are underway. So far, however, the analysis of data for question (2) has revealed that on all four tasks and within both same and cross gender dyads, both L2 lexical and structural data were made available to the NNSs through the NS signals and responses. Although some variation has been revealed in the quantity of signals and responses and in their lexical and structural features with respect to gender and task, the variation has seldom been significant.

In order to focus the current discussion on the analysis of question (1) with respect to whether, and if so, how, negotiation provided the NNSs with L2 data for their learning, the Negotiation Framework was applied to the NS-NNS negotiation data using the following procedures :

(1) All NS utterances of response to NNS signals were examined in terms of whether they offered L2 input which was an unmodified, repeated, or modified version of the NS trigger or NS signal, i.e., whether the NS response fit categories (3a) - (3g) in the Negotiation Framework.

(2) All NS modified utterances of response to NNS signals were examined in terms of whether the modification was lexical, morphological, or structural, or a combination of these. To do this, response utterances which had been categorized as (3d) were further differentiated in terms of subcategories (3d1) - (3d4)

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(3) All NS signal utterances to NNSs were examined in terms of whether they offered a version of the NNS trigger which was unmodified, repeated, or modified, i.e., whether they fit categories (2a)- (2c).

(4) All NS modified signal utterances were examined in terms of whether their modification was lexical, morphological, or structural, or a combination of these. To do this, signal utterances categorized as (2c) were differentiated into subcategories (2c1) - (2c4).

Findings

Overview

As displayed in Tables 1-2 below, NS-NNS negotiation generated a predominance of NS utterances of response in which L2 input was repeated and modified. Negotiation also resulted in NS signal utterances in which a version of the NNS trigger was repeated and modified. Also offered were brief, open questions which provided no explicit L2 data, but invited the NNSs to encode responses from their own interlanguage resources.

Further, NS modified signal and response utterances contained both lexical and structural data. However, they contained extremely few morphological modifications. Thus, the NS input generated during their negotiation with the NNSs offered data focused on L2 structural modifications, lexis and lexical relationships, but not morpheme affixation. A more detailed analysis is provided below.

TABLE 1a* NS Utterances of Response to NNS Signals		
NS utterances of response to NNS signals	n utterances	% NS utterances of Response
Without repetition or modification of NS trigger (3a), (3f), (3g)	169	24
With repetition of		
NS trigger (3b)	12	2
or NNS signal (3e)	12	2
With linguistic modification of		
NS trigger (3d)	467	67
or NNS signal (3e)	39	6
Total	699	101**

*For NS - NNS dyads on four information-exchange tasks.
**Due to rounding, the total percentage adds up to more than 100.

TABLE 1b Modifcation in NS Utterances of Response to NNS Signals		
Modification of NS trigger in NS utterances of response	n utterances	% NS (3d) utterances
Lexical (3d1)	226	48
Morphological (3d2)	0	0
Lexical + morphological (3d1 + 3d2)	1	0
Structural:	129	28
segmentation with movement (3d3)	37	
segmentation w/o movement (3d4)	88	
segmentation with movement of some parts of NS trigger + segmentation w/o movement of other parts ((3d3 + 3d4)	4	
Lexical + morphological + structural (3d1 &/or 3d2) + (3d3 &/or 3d4)	111	4
Total NS (3d) utterances	467	100

NS Response Types

As shown in Tables 1a and 1b, all seven types of response were represented in the 699 NS utterances of response that the NNSs were given in response to their signals. Four hundred sixty-seven or 67 percent of these utterances were found in the four sub-categories of (3d1-3d4) as modified versions of the NS trigger. Thus the majority of NS responses to signals of the NNSs offered them modified L2 input. Six percent of the NS response utterances were of the (3e) type. As modifications of the NNS signal, these utterances offered NNSs an opportunity to hear a native, often more target-like, version of their interlanguage input. There was also a very small percentage of repetition of NS trigger (3b) and NNS signal (3c) in the NS response utterances.

Twenty-four percent of the NS utterances of response were of the (3a, 3f, or 3g) type, and thus were not modified versions of the NS own original trigger. Often they were (3a) signals and, as such, were short, affirmative confirmations or acknowledgements of yes, yeah, right, etc. of what the NNSs had uttered in their signals. Since, as shown in Pica 1991, 74 percent of the *NNS* signals were of type (2c3), and thus were short segments of the NS trigger, NS (3f) responses to such signals may have served a number of important purposes. They may have provided NNSs with confirmation, clarification, or correction with respect to their own

segmentation of L2 structures and forms. Further, they may have offered NNSs information on how the L2 could be analyzed into meaningful constituents.

These various potential contributions of the different NS response types can be seen in (10) below, an excerpt of negotiation taken from a picture-drawing information gap task. In (10), the first NNS signal, a (2c4) type, segmented *buvdaplate* from the NS trigger utterance, *and above the plate*, then embedded the segmented item into a wh-question, *what is buvdaplate* ? The NS responded with a (3d3) type of response, which thereby segmented *above* from the trigger utterance and uttered it in isolation. This NS response appeared to help the NNS with the additional segmentation of *buvdaplate* into *above the plate* ?. The NNS then sought confirmation through a second signal, also a (2c4) type, which the NS then confirmed with a (3f) type response of *yeah*.

(10) **NNS**   **NS**

                                 with a small pat of butter on it

hm hmm   and above the plate

what is buvdaplate?   above

above the plate?   yeah

The (3f) type response of *yeah* in (10) serves to highlight several possible contributions made by NS (3f) type responses. When NSs respond to NNS signals through acknowledgements and confirmations of yeah and with other linguistic realizations of the (3f) category, such as yes and uh huh, these responses confirm for NNSs that they have correctly understood the NS trigger utterance. NS (3f) type responses also indicate to NNSs that their signals are comprehensible.

Unfortunately, in their emphasis on confirming NNS comprehension and comprehensibility, NS (3f) type responses run the risk of providing NNSs with inaccurate or incomplete L2 data. The NNSs may be misled into concluding that their encoding of the signal was more than simply comprehensible to the NS, but was target-like as well. Fortunately, however, as noted in Pica et al (1990), and as revealed throughout the data of the present study, NS (3f) type responses tend to be produced subsequent to the initial NNS signal - NS response exchange, i.e., after the NNS has provided a second or third signal, closer to the meaning the NS has been trying to convey. This exactly what has happened in (10). The NS responded to

buvdaplate ? with modified L2 input, but offered the response of *yeah* after the NNS had signalled with the more target-like *above the plate?*.

Modifications in NS Utterances of Response

The frequency and proportion of modifications in the NS utterances of response to NNS signals are also displayed in Tables 1a and 1b. NS modifications were focused on L2 lexis and structure, both separately and in combination within the same utterance. The majority of the modifications, or 48 percent, were of L2 lexis exclusively, and thus were characterized by synonym substitution and use of paraphrase and example.

Structural modifications of L2 input were given to NNSs in 129 or 28 percent of the NS utterances of response. More than half of these modifications involved segmentation of a word or phrase from the trigger utterance without movement into a different location in the response utterance. Thus, in response to their signals, the NNS would be given a word or phrase that the NS extracted from the NS trigger and either repeated in isolation or embedded in an expression such as I mean ... or So it's supposed to be ...

As noted above, these and other utterances of response in the data which involved segmentation alone were very much like partial repetitions of the trigger. What this suggested was that despite the tiny amount (two percent) of verbatim repetition of entire L2 trigger utterances given to the NNSs in response to their signals, a great deal of L2 repetition through structural segmentation was nonetheless available to them. Both the exact repetitions and the repeated segments offered the NNSs an opportunity to listen to the L2 input they may have missed the first time around in the NS utterance that had triggered their signal. In addition, the segmentation of L2 forms and constituents from larger units in these partial repetitions gave NNSs opportunities to obtain data on L2 structural units.

Finally, 24 percent of the modified NS utterances of response given to the NNSs were modified in terms of both lexis and structure. Typically, as shown in (11), below, NNSs would be given a segmented part of the NS trigger utterance to which the NNS had signaled, in this case *straight out* . What was segmented would then be embellished by the NS with a premodifier or postmodifying phrase or would be preceded or followed by a paraphrase or description. Such responses thereby offered NNSs data on both L2 structural segmentation and ways in which the meanings of the resulting segments could modified.

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(11)   **NNS**   **NS**

                                         they're just straight out

        straight out?   towards her back her left arm towards
                                         her back... straight out

Further examples of negotiation in which the NS response might bring salience to relationships between form and meaning was seen in (10), above, during which the NS segmented one constituent out of what the NNS had initially heard as the single unit *buvdaplate*. A similar form-meaning relationship was revealed in (12), below. Here, the NNS used (2c3) segmentation-type signals, asking the NS, first about *rectangular*, then about *rectangle*. The NNS third signal also used segmentation, but in so doing extracted *square* from the prepositional phrase *like a square* and juxtaposed it to *except*. The NS response provided further information on the meaning of *square* as well as showed the NNS that *except* can join the two utterances, *a rectangle is a square except a square has four equal sides*.

(12)   **NNS**   **NS**

                                         ...it's a rectangular bench

        rectangular?   yeah it's in the shape of a rectangle
                                         with um you know a rectangle has
                                         two long sides and two short sides

        rectangle   re-rectangle it it's like a square
                                         except you flatten it out

        square except?   um a rectangle is a square

        uh huh   except a square has four equal
                                         sides

        yes   a rectangle has two sides that are
                                         much longer and two sides that are
                                         much shorter

NS Signal Types

As shown in Tables 2a and b, of the 558 signal utterances that NNSs were given by NSs, 442 or 79 percent of these utterances were of the (2c1) - (2c3) type and therefore contained modification of all or some of the features of the NNS trigger.