

THE EXTENT TO WHICH LANGUAGE LEARNING THROUGH NEGOTIATION IS RETAINED OVER TIME

John Bitchener
School of Languages
Auckland University of Technology

Abstract

This article presents the preliminary findings of a study of the relationship between the negotiation of meaning and second language acquisition. The 30 pre-intermediate ESL learners who participated in the study were asked to repeat a communication task one week and twelve weeks after its first performance. Evidence of learning and of a relationship between negotiation and acquisition was measured by the extent to which participants successfully produced the negotiated linguistic features during the repeated sessions. The study found that lexical features, particularly concrete nouns, were negotiated more often than phonological and morpho-syntactic features, that there was a high retention rate one week later and also twelve weeks later, and that these rates were not related to a particular linguistic category.

Introduction

Since the early 1980s, considerable attention has been given by SLA researchers to investigating the role of interaction in second language learning/acquisition. Long (1996), in the revised version of the Interaction Hypothesis, claims that when the meaning of communication difficulties is negotiated, learners are able to access target language data from the feedback they receive on their linguistic output and use this data to reformulate their output in a more comprehensible manner. Thus, learners are provided with opportunities to receive and attend to linguistic form while resolving communication difficulties. However, as Schmidt (1990, 1994) and others also point out, acquisition through this negotiation process can only occur if learners first notice the gap between their interlanguage output and the target language version provided in the feedback.

The adjustments and modifications that are made to linguistic form and conversational structure during the negotiation process have been described by Varonis & Gass (1985) and Pica, Holliday, Lewis, Berducci & Newman (1991). A simple negotiation sequence comprises at least three moves (a **trigger** utterance, a **signal** of non-understanding, and a **response** to the signal). An optional fourth move (a **reaction** to the response) may conclude the sequence. The following negotiation

sequence from the current study is an illustration of how linguistic form can be modified when the second speaker signals a communication difficulty:

- (1) S1: Platform two **door** is closed
 S2: You mean the **gate** is closed?
 S1: **Gates**? Yeah, the **gates** are closed. Yeah, yeah, the **gate** is like **door**.
 S2: Yeah, closed. The **gate** is closed. You too?

Because the second speaker did not know whether the first speaker was actually referring to a door or a gate, he initiated a negotiation sequence to clarify his intention. In doing so, he semantically modified the first speaker's utterance which had triggered the difficulty. In response, the first speaker semantically modified his trigger utterance. The second speaker's reaction to this response indicated that they had resolved the temporary impasse and that the main line of conversation could continue.¹ According to the Interaction Hypothesis, modifications of this type are an indication that learning may have occurred but, unless the feature that has been modified is retained and reproduced accurately on subsequent occasions, it cannot be known whether the feature has actually been acquired.

Empirical research by Pica and other authors (Pica, Holliday, Lewis & Morgenthaler, 1989; Pica et al, 1991; Pica, Lincoln-Porter, Paninos & Linnell, 1996) has shown that learners can and do negotiate for meaning, both with native speakers and non-native speakers. They have noted that while modified feedback is provided by learners, it is not as extensive as that provided by native speakers. This body of research has also reported that lexical and phonological difficulties are more frequently negotiated and modified than problematic morpho-syntactic features, but the extent to which this uptake (feedback data that is incorporated into modified output) results in acquisition over time is still uncertain. With the exception of a few studies that have revealed short-term gains for vocabulary (Ellis, Tanaka & Yamazaki, 1994; Ellis & He, 1999) and targeted morphology (Mackey, 1995, 1999), there is limited empirical evidence to demonstrate the extent to which long-term retention can result from the negotiation of meaning. As Gass, Mackey and Pica (1998, p.302) explain, "longitudinal data or delayed post-tests are ... a necessary step in order to test this hypothesis". To help address this need, a longitudinal study involving thirty pre-intermediate ESL learners was undertaken. Preliminary findings from a part of the study are reported in this article.

The Study

The study investigated the extent to which language learning through negotiated interaction is retained when second language learners repeat a communication task on two further occasions (after one week and after twelve weeks).

Research Questions

The following research questions were investigated:

- To what extent do phonological, lexical and morpho-syntactic difficulties trigger negotiation sequences when pre-intermediate ESL learners interact with one another?
- To what extent does the negotiation of these difficulties result in immediate modified output?
- To what extent is the modified output retained after one week?
- To what extent is the modified output retained after twelve weeks?

The Method

Data were collected from thirty pre-intermediate ESL learners in the Certificate in English Language programme at Auckland University of Technology. The participants were from different countries (Iran, Africa, Korea and China) and were randomly assigned to fifteen single-sex dyads.

Each participant performed the same communication task on the three separate occasions. The second session was held one week after the first session and the third session took place twelve weeks later. On each occasion, the participants were paired with a different partner.

During each ten minute session, the participants were asked to perform a spot-the-difference two-way information gap task entitled 'At the railway station' (see Appendix). This task required each participant to discuss the ways in which their partner's picture was different to their own. This particular type of task was chosen because earlier research has found that two-way information gap tasks are more likely to produce optimal conditions for the negotiation of meaning (Ellis, 2000; Pica, Kanagy & Falodun, 1993).

Before the participants recorded their conversations, brief instructions were given by the researcher concerning the operation of the tape-recorder. They were not told what the researcher would be

looking for. The researcher was not present in the room while the conversations were being recorded. Each recording was transcribed.

When the recording of the first session had been transcribed, the researcher identified the negotiation sequences by first locating signals of non-understanding and then checking that these were followed up with a response move. The linguistic feature that had triggered the signal of non-understanding was then identified. The study was only interested in the negotiation of phonological, lexical and morpho-syntactic difficulties.

The same task was repeated during sessions two (one week later) and three (twelve weeks later). On each occasion, the researcher examined the transcripts to see which of the linguistic features that had triggered the signal of non-understanding and had been modified as a result of the signal were accurately produced on these new occasions by the participant who had triggered the difficulty. If the modification that was made during the first session was accurately produced during these subsequent sessions, the researcher considered this to be evidence of language learning. To qualify as an instance of retention, the modified version had to be used when the participant was discussing the same picture detail as that which was being discussed during session one when the difficulty was negotiated.

Results and Discussion

An analysis of the data from session one found a total of 52 negotiations of meaning across the 30 participants. One participant produced 5 negotiations, four produced 4 negotiations, four produced 3 negotiations, three produced 2 negotiations, thirteen produced 1 negotiation and five did not produce any negotiations. Therefore, on average, there were 1.7 negotiations per participant. For a ten minute interaction, this may seem rather small but as Foster (1998, p.1) has pointed out "the negotiation of meaning is not a strategy that language learners are predisposed to employ when they encounter gaps in their understanding".

The first research question asked to what extent phonological, lexical and morpho-syntactic difficulties triggered negotiation of meaning sequences. Table 1 presents the negotiation frequencies for the three categories.

Categories	Negotiation triggers	
Phonology	12	23.1%
Lexis	35	67.3%
Morpho-syntax	5	9.6%
Total	52	100%

Table 1: Negotiation triggers by linguistic category

The table shows that a noticeably higher proportion of negotiation sequences were triggered by lexical difficulties. This finding is not altogether surprising given the particular focus of the task and similar findings in other studies (Bitchener, 2000; Pica et al, 1989, 1991, 1996). Knowing what to call people, objects and places is particularly necessary when talking about a picture information gap task if one's conversational partner is to know exactly what one is referring to.

As far as the phonological difficulties are concerned, studies by Bitchener (2000), Doughty & Pica (1986) and Varonis & Gass (1985) found that when learners mispronounce words, their conversational partners may not find a need to negotiate meaning, particularly if they are from similar L1 backgrounds. During the negotiation phase of the study (session one), eight of the dyads comprised learners from the same L1 background. This may well have had a limiting effect on the frequency of negotiations that were triggered by phonological difficulties. Future research should therefore compare the effect of different pairings (same L1 background and mixed L1 background) on the frequency of phonological triggers.

That there was very little negotiation of morpho-syntactic difficulties was also not surprising. Earlier studies by Pica and associates had found that morphological features are rarely attended to by second language learners. In her reviews of negotiation research, Pica (1994, 1996) explained that this phenomenon probably occurs because the type of communication tasks that learners are given can usually be completed without conscious attention to morphology. As Mackey (1995, 1999) found, communication tasks that are designed to target particular morpho-syntactic features may provide learners with more opportunities for accessing such data and using it to reformulate problematic utterances.

The second research question asked to what extent the negotiation of these difficulties resulted in immediate modified output, and therefore the extent to which learning may have been initiated by the negotiation process.

Categories	Negotiations initiated	Modified Output	
Phonology	12	8	67%
Lexis	35	20	57%
Morpho-syntax	5	2	40%
Total	52	30	58%

Table 2. Modified output by linguistic category

Table 2 presents the modified output frequencies for each of the three linguistic categories. Although these results seem to indicate that none of the linguistic categories is more likely to bring about a modification of a trigger utterance, further research with a larger sample would need to investigate whether it can be concluded that phonological difficulties, for example, are more frequently modified during negotiation than morph-syntactic difficulties.

The third research question asked to what extent the modified output was retained and accurately produced when the same task was repeated one week later with a different conversational partner. Retention was determined by identifying whether the trigger utterance which had been modified during the negotiation sequence was accurately produced during the second interactional session by the participant who had produced it. For example, the following negotiation sequence was triggered by a lexical difficulty:

- (2)
- S1: under the chair is a suit (.) suit (.) um//
- S2: //suitcase?
- S1: a suitcase, you call it a suitcase, oh
- S2: yeah, a suitcase, we take for holidays//
- S1: //yeah, yeah, a suitcase
- S2: is it under the chair?

The first participant either did not know or could not remember the word 'suitcase' but in the following exchange, the word is used correctly during the second session:

- (3)
- S1: in my picture there is one suitcase under the chair
- S2: me too
- S1: how many suitcases in your trolley?

Table 3 indicates the extent to which the modified triggers were accurately produced one week later. The frequencies indicate a high rate of retention across the three categories and that the rate of retention does not vary according to the linguistic category.

Categories	Modified output (session 1)	Retention after 1 week (session 2)	
Phonology	8	8	100%
Lexis	20	14	70%
Morpho-syntax	2	1	50%
Total	30	23	77%

Table 3: Modified output retained after one week (session 2)

It is interesting to note that all of the phonological difficulties were successfully produced during the second session. The following examples illustrate how one of the recurrent phonological difficulties that was accurately modified during the negotiation process in session one was accurately produced when required during session two. Four Chinese participants had difficulty pronouncing the word ‘train’. In the negotiation sequence below, it can be seen that speaker one’s pronunciation of the word ‘train’ triggered the negotiation sequence, that speaker two’s modification signalled the non-understanding, and that speaker one’s response made use of speaker two’s modified utterance:

- (4) S1: In my picture, one lady with her daughter is walking into the **chain** (cen)//
- S2: //into the **train**? (tren)
- S1: No. Into the **train** (tren) station
- S2: Oh, the train station, not the train.

In session two (one week later), speaker one refers again to the lady walking into the train station with her daughter. On this occasion, she pronounces the word ‘train’ correctly:

- (5) S1: Is there a lady and daughter walking into the **train** (tren) station?
- S2: Yes, she is walking to platform one.
- S1: Ok, my picture two.

That all the phonological modifications were successfully produced during the second interactional session might cause one to question whether all of the original trigger utterances had occurred as a result of incomplete phonological knowledge, and therefore whether the correctly modified versions were actually instances of new learning. It could equally have been the case that these difficulties arose as a result of situational slips. Given the difficulty of finding out from participants whether problematic utterances occur as a result of a lack of knowledge or whether they are simply a situational slips, it is difficult to know which category they belong to. However, there can be certainty that the correct version of such utterances in this study were retained over the twelve week period.

As far as lexical retention is concerned, table 3 shows that 14 of the 20 instances where lexical modification had occurred during session one were retained and accurately produced in session two. It is noteworthy that each of these retentions involved concrete nouns. The following episode illustrates the observation:

- (6) S1: I can see a suitcase under the **chair**
 S2: Where is **chair**?
 S1: It is in front of platform one
 S2: In my picture, there is a **bench**, not a **chair**
 S1: My picture has a big **chair** (.) it is long
 S2: Same in my picture, that's a **bench**
 S1: So we call it **bench**
 S2: Yeah, a **bench**

This finding corroborates those of two earlier studies that have reported short-term gains for lexis (Ellis et al, 1994; Ellis & He, 1999). In one of the studies reported by Ellis et al (1994), known as the Tokyo study, the acquisition of target lexical items was measured two days, two weeks and six weeks after the treatment. The study reports clear gains for vocabulary acquisition, but as the researchers point out, they were only investigating the acquisition of concrete nouns. Consequently, they explain that their finding does not necessarily guarantee that negotiated interaction will promote the acquisition of other aspects of vocabulary acquisition. While the current study found that ten of the fourteen lexical modifications involved concrete nouns, further research with a larger sample would need to investigate the extent to which concrete nouns are negotiated, modified and retained more frequently than other noun categories.

In the earlier discussion of the retention of phonological modifications during session two, it was pointed out that retention was evidenced by the accurate production of the negotiated feature when referring to the same point of content. The same measurement procedure applied to the retention of the fourteen lexical items produced during session two. The following episode illustrates how speaker one in example (1) above, who had originally referred to the gate as a door, referred to the gate as a gate during session two with a different conversational partner:

- (7) S1: The lady cannot go to platform three because the gate is closed
 S2: No, in my picture, the platform three gate is open
 S1: Ok, my picture is different

The fourth research question asked to what extent the modified output was further retained and accurately produced 12 weeks later. The frequencies presented in Table 4 are virtually identical to those recorded in Table 3. In other words, the passage of time did not have a noticeable effect on the gains reported in the second interactional session.

Categories	Modified output (session 1)	Retention after 12 weeks (session 3)	
Phonology	8	8	100%
Lexis	20	14	70%
Morpho-syntax	2	2	100%
Total	30	24	80%

Table 4: Modified output retained after twelve weeks (session 3)

All of the phonological and lexical modifications that were retained after one week were again retained after twelve weeks and the rate of retention did not vary according to the linguistic category. The one morpho-syntactic feature that was successfully modified during the original negotiation episode but not retained one week later was employed successfully during the third interaction. That interactionally modified feedback may have a delayed rather than an immediate effect on acquisition, as would seem to be the case in this instance, was also observed in Mackey's (1995) study of the acquisition of English question patterns. That study found an increase in the production of higher-level question structures in a post-test administered one week later.

Conclusion

The findings of this study not only corroborate a number of those from earlier negotiation studies, but also reveal several new insights into the possible effect of negotiation and task repetition on language acquisition. Like earlier studies by Pica et al (1989, 1991, 1996), the study found that pre-intermediate ESL learners do negotiate the meaning of problematic utterances, that they do provide one another with modified feedback, and that they do make use of this data when reformulating their utterances. It found that a higher proportion of negotiation sequences were triggered by lexical difficulties than by phonological and morpho-syntactic difficulties.

The primary aim of the study was to investigate whether learning which had been initiated during the negotiation process was retained over time and whether there was a relationship between retention rates and the linguistic categories. During sessions two (after one week) and three (after twelve weeks), the rates of retention were identical for both the phonological and lexical features, indicating that the passage of time did not have a noticeable effect on retention. Although the retention rate for the morpho-syntactic features increased over time, it is not possible to predict that such a pattern might similarly occur on other occasions as the frequency count was so small. The study also found that there was no noticeable relationship between the rates of retention and the three linguistic categories in either of the post-test interactions.

The extent to which the findings of the study can be generalised to other populations needs to be handled with caution. On the one hand, this was a preliminary study in which the participants interacted with their conversational partners for only ten minutes. As a result, the frequency of negotiation was quite limited. Future research will need to examine a larger sample size and test the statistical significance of the observations. Another limitation of the study was the choice of communication task. Participants were only asked to perform one particular type. Further research needs to investigate the extent to which these findings are observed when other types of task are employed. For example, tasks that target particular morpho-syntactic features may well find that ESL learners negotiate a greater number of these features than the current study found. From this base, a more extensive study of retention rates across the three linguistic categories would be possible. Although further research needs to take into account these limitations, the findings of this preliminary investigation are promising at least for the development of vocabulary that has been attended to during the negotiation process.

From a pedagogical point of view, the study indicates that picture-based information-gap tasks provide learners with good opportunities for accessing and producing at least certain aspects of the lexicon. Whether or not other types of communication task facilitate opportunities for vocabulary learning in addition to concrete nouns would need to be investigated in further research. It may well be the case, for example, that decision-making and problem-solving tasks generate opportunities for the negotiation and learning of abstract nouns. The study also shows a high retention rate over several months for phonological and lexical items that are successfully negotiated on earlier occasions. While this was achieved in this study through the repetition of the same task, it may also be the case that learners are able to demonstrate this level of learning when performing other types of task. Additional research would need to be designed for testing this possibility.

Concerning the merits of incorporating task repetition into classroom programmes, many teachers may think this is unwise. Providing they explain the benefits that can accrue from task repetition, particularly that which is performed with different partners, students may well approach the task with a positive attitude. One such benefit that might be explained to students concerns Bygate's (1996) finding that task repetitions provide learners with better opportunities to focus their attention on morpho-syntax once content and lexical aspects have been mastered during earlier sessions. While this focus was not incorporated into the design of this study, it could easily be investigated in a more extensive study of language learning over time.

Note:

¹ Signals of non-understanding do not always contain a modified version of a trigger utterance. Sometimes, the second speaker will seek clarification in the form of an open question without referring directly to the problematic feature and therefore not present the first speaker with a modified target-language version. On other occasions, the second speaker may merely repeat the trigger utterance with rising intonation. In both of these situations, the first speaker is pushed to further draw upon his interlanguage and attempt a reformulation. See Varonis & Gass (1985) for a more detailed statement.

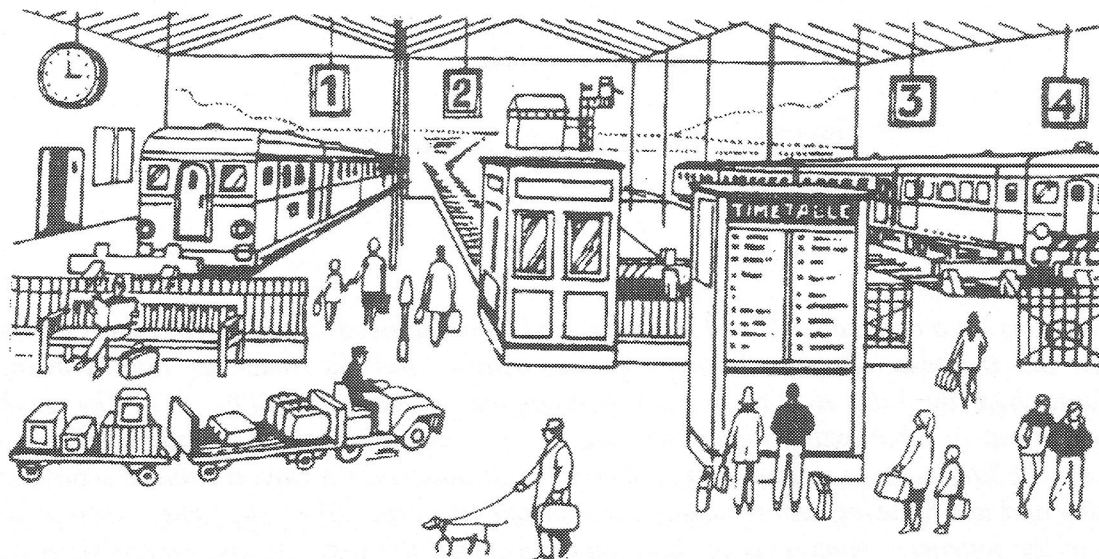
References

- Bitchener, J. (2000). Do advanced L2 learners benefit from the negotiation of meaning? *New Zealand Studies in Applied Linguistics*, 6, 23-51.
- Brown, J. (1992). Statistics as a foreign language – Part 2: More things to consider in reading statistical language studies. *TESOL Quarterly*, 26, 629-664.
- Doughty, C. & T. Pica (1986). Information gap tasks: Do they facilitate second language learning? *TESOL Quarterly*, 20, 305-325.
- Ellis, R. (2000). Task-based research and language pedagogy. *Language Teaching Research*, 4, 3, 193-220.
- Ellis, R. & He, X (1999). The roles of modified input and output in the incidental acquisition of word meanings. *Studies in Second Language Acquisition*, 21, 285-301.

- Ellis, R., Tanaka, Y. & Yamazaki A. (1994). Classroom interaction, comprehension, and the acquisition of L2 word meanings. *Language Learning*, 44: 449-491.
- Foster, P. (1998). A classroom perspective on the negotiation of meaning. *Applied Linguistics*, 19, 1-23.
- Gass, S., & Varonis, E. (1994). Input, interaction, and second language production. *Studies in Second Language Acquisition*, 16, 283-302.
- Gass, S., Mackey, A. & Pica, T. (1998). The role of input and interaction in second language acquisition: Introduction to the special issue. *The Modern Language Journal*, 82, 299-307.
- Long, M. (1996). The role of the linguistic environment in second language acquisition. In *Handbook of language acquisition, Volume II: Second language acquisition*. W. Ritchie and T. Bhatia (Eds.), 413-468. New York: Academic Press.
- Mackey, A. (1994). Targeting morpho-syntax in children's ESL: An empirical study of the use of interactive goal-based tasks. *Working papers in Educational Linguistics*, 10, 67-88.
- Mackey, A. (1995). *Stepping up the pace: Input, interaction and interlanguage development. An empirical study of questions in ESL*. Unpublished doctoral dissertation, University of Sydney, Australia.
- Mackey, A. (1999). Input, interaction and second language development: An empirical study of question formation in ESL. *Studies in Second Language Acquisition*, 21, 557-587.
- Pica, T. (1994). Research on negotiation: What does it reveal about second language learning conditions, processes, and outcomes? *Language Learning*, 44, 493-527.
- Pica, T. (1996). The essential role of negotiation in the communicative classroom. *JALT Journal*, 18, 241-268.
- Pica, T., Kanagy, R. & Falodun J. (1993). Choosing and using communication tasks for second language instruction. In G. Crookes and S. Gass (Eds) *Task-based learning in a second language* (pp 9-34). London: Multilingual Matters.
- 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, 343-376.
- Pica, T., Holliday, L., Lewis, N. & Morgenthaler, L. (1989). Comprehensible output as a outcome of linguistic demands on the learner. *Studies in Second Language Acquisition*, 11, 63-90.
- Pica, T., Lincoln-Porter F, Paninos D. & Linnell J. (1996). Language learners interaction: How does it address the input, output, and feedback needs of L2 learners? *TESOL Quarterly*, 30, 59-84.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 1, 129-158.
- Schmidt, R. (1994). Awareness and second language acquisition. *Annual Review of Applied Linguistics*, 12, 206-226.
- Varonis, E. & Gass S. (1985). Nonnative/nonnative conversations: A model for negotiation of meaning. *Applied Linguistics*, 6, 71-90.

Appendix

Picture 1A



Picture 1B

