

Interactive Pair Work in Grammar-discovery Tasks: Focus on Form and Mutual Scaffolding*

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Han, Young-Ju. (2006). Interactive pair work in grammar-discovery tasks: Focus on form and mutual scaffolding. *English Teaching*, 61(2), 45-69.

This study investigated how learners perform a grammar-discovery task by focusing on two conditions thought to be important for L2 learning: focus on form and the interaction which takes place while learners solve problems in the task. Focus on form was defined by the occasions when learners are engaged in discussing the target structure and interaction was investigated in terms of scaffolding which occurred between learners during dyadic discussion. The analysis of the data showed that the learners were engaged in discussing the target structure but there was no positive link between the extent to which learners discuss the target form and gains in learning. All transcriptions of learners pair work displayed evidence of scaffolding in various forms, indicating that the learners approached the task with a collaborative orientation. The analysis further showed that members of the dyad engaged in co-construction of knowledge through collaboration with their peers. The results were discussed within the framework of sociocultural theory and pedagogical implications for L2 learning were suggested.

I. INTRODUCTION

Input-rich, communicatively oriented classes which emphasize expressing and exchanging messages are widely assumed to promote the development of fluency. However, there is evidence from studies of immersion education suggesting that such instruction is not successful in enabling learners to achieve target-like proficiency (Swain, 1985). This is so despite years of meaningful input and opportunities for interaction. Few teachers and researchers would disagree that more attention to grammatical accuracy is needed but less consensus exists as to how this might be best accomplished.

One obvious, but nevertheless controversial, way is the teaching of explicit knowledge

* This work was supported by the Korea Research Foundation Grant. (KRF-2005-013-B00114)

of grammatical rules in second language acquisition (SLA). In response to empirical findings which indicate that a return to some type of formal instruction may be necessary after all (Genesee, 1987; Swain, 1985), several lines of research have emerged which are exploring ways to integrate grammar instruction with opportunities for meaningful communication (see Fotos, 1994). Fotos and Ellis (1991) and Ellis (1997) recommended a task-based approach to grammar instruction to provide learners with data for which they need to discover the rule interactively. Called a consciousness-raising task (Ellis, 1991) or a grammar-discovery task, it is communicative and has a second language (L2) grammar problem as the task content. Although the linguistic item is the focus of the task, the learners are engaged in the talk as they solve the grammar problem interactively. They develop grammatical knowledge while they are communicating.

One of the virtues of grammar-discovery tasks, as Fotos (1993) notes, is that they simultaneously provide a platform for teaching form and for communicating for a realistic purpose. While grammar-discovery tasks have yet not been widely investigated, research on grammar-discovery tasks has largely concentrated on whether they are effective on gains in learning (Fotos, 1993, 1994; Fotos & Ellis, 1991; Sheen, 1992). There is therefore a need for research to investigate the process of performing such tasks. The growing body of research based on sociocultural theory (SCT) suggests that the study of dialogic interactions during task performance will provide a window on the transformation of the social interaction into the cognitive one of metalinguistic awareness. SLA research based on the sociocultural tradition offers new insight into learning processes. Given the relative infancy of the sociocultural perspective, there is a need for more studies in this area.

II. THEORETICAL BACKGROUND

Communicative tasks, in general, emphasize the importance of a focus on meaning. Recently, researchers, however, have turned their attention to how learners in a task temporarily suspend attention to meaning in order to focus on form (Ellis, 2003). By switching attention to form during the performance of a task, teachers can incorporate form-focused instruction into meaning-focused instruction. This line of task-based research has been motivated by developments in SLA theory that stress the importance for acquisition of conscious noticing of forms in the input. According to Schmidt's Noticing Hypothesis (1990, 1994), such attention is necessary before any subsequent processing of that form can take place. Further, Schmidt argues that noticing is a conscious process. It then follows that form-focused tasks induce learners to pay conscious attention to forms in the input and that this noticing assists the process of interlanguage development. These tasks, while they can still be considered communicative, are designed to draw learners'

attention to grammar and raise their awareness of linguistic forms.

A second line of research, relevant to this study, concentrates on the role of interaction. Interaction is seen to be a source of input to learners. Krashen's Input Hypothesis (1981) states that language acquisition is input-driven; that is, learners acquire an L2 when they are exposed to comprehensible input. One way in which input is made comprehensible is through interactional modification or negotiation of meaning. Long's Interaction Hypothesis (1980) places a similar emphasis on the role of input but stresses the importance of the interactional modifications that occur in negotiating meaning in the discourse in order to understand and be understood by the interlocutor.

Brooks and Donato (1994) note that many of L2 studies of interaction have centered on estimating the amount of negotiation of meaning that takes place between the participants and investigating factors that may affect the quantity of these negotiations. They criticize such studies, arguing that when verbal interaction is reduced to, and represented as a set of figures and numbers that have been manipulated in some way, they exclude the important thing we are most interested in: the language itself and the activity of the learners. They maintain that in order to understand language learning that results through interaction, the focus of research needs to move beyond identifying sources of comprehensible input and negotiating meaning to looking qualitatively at what language learners are actually trying to achieve during such verbal interactions. Swain (2000) supports this argument and calls for a broader perspective of L2 learning that moves beyond linguistic interactions for the comprehensible input, to the nature of interactions and its relationship to language learning.

SCT based on the work of Vygotsky (1987) provides an alternative theoretical account of how L2 learning occurs as a result of interaction. The central concept of SCT is that human mental activity is a mediated process, in which symbolic, and socioculturally constructed artifacts, the most pervasive of which is language, play an essential role in mental life of the individuals (Lantolf, 2000). The process is social in origin and its development in children proceeds from social, or intermental domain, to the individual, or intramental domain, as a consequence of the linguistically mediated interaction which arises between children and more experienced members of their sociocultural world.

Although Vygotsky's work focused on the cognitive development of child, it is argued that it can be applied to L2 learning (Donato, 1994; Ohta, 1995; Swain & Lapkin, 1998). When L2 learners have the opportunity to interact with other users of the language, for example, a teacher, or another learner, they are able to carry out tasks in the language that they cannot perform by themselves. In this instance, other people help to mediate the task. The inter-personal knowledge that is created through interpersonal mediation, however, can also be reconstructed through tool mediation, for example, when learners use writing, or gestures. It can also be reconstructed as sign mediated knowledge, as when learners talk to themselves, or read silently. In this way, knowledge that was once external is

successively reconstructed as interpersonal and then intrapersonal.

This theoretical perspective has led to task-based studies that investigate scaffolding or what Swain (2000) referred to as collaborative dialogue, the supportive interactions that arise when learners communicate with others (Aljaafreh & Lantolf, 1994; Donato, 1994; Swain & Lapkin, 1998). Scaffolding is more effective if the expert (e.g. teacher) knows what the novice (e.g. learner) can and cannot do without assistance and thus if the assistance provided by the expert is finely tuned to the learners' needs (Nassaji & Swain, 2000). In particular, scaffolding involves the interactive work in which the expert and the novice collaborate in constructing a mutual activity frame in which the novices can participate actively in their own learning. This activity frame is referred to as *zone of proximal development* (ZPD).

Scaffolding can also arise in interactions between learners. Ohta's (1995) study reported that learners could benefit from each other's scaffolded assistance in a role-playing task. She also noted that roles of novice and expert in learner-learner interactions can be fluid, with both learners to act in turns as both expert and novice at different times in pair work. Donato (1994) demonstrated how groups of university students worked together and assisted each other to reach a higher level of performance. He referred to this as collective scaffolding. In such groups, members of the group as a whole built on the contributions of other members and collectively constructed an outcome that no single member envisaged at the outset of the collaboration.

The present study, part of a larger study examining what L2 learners learn as a result of engaging in dyadic dialogue when completing a problem-solving task, investigates how learners perform a grammar-discovery task by focusing on two conditions considered important for L2 learning: focus on form and interaction during the dialogue which takes place when learners work to solve linguistic problems in the task. SCT was employed for the analysis not only to lend an alternative perspective on the importance of interaction in L2 learning but also to provide a different approach to the analysis of such interactions.

III. THE STUDY

1. Research Questions

Research question 1 had two components: what is the extent to which learners are engaged in discussing the target structure during dyadic discussion and what relationship is there between the extent to which the learners discuss the target structure and the learning that results? Research question 2 was: what are the features of dyadic discussion when completing a grammar-discovery task? This investigation focused on the features of

scaffolded assistance in pair work because this notion of scaffolding is of particular relevance to task-based learning.

2. Participants

The participants of this study comprised of 16 adult learners of English in a language institute in Auckland, New Zealand. Their level of English was upper intermediate according to their scores on the placement test administered by the institute. The learners needed sufficient proficiency to talk metalinguistically about the target feature. Lacking this they would not be able to benefit to the same degree from the task employed in this study, because they often did not share an L1 that could be used to talk about the target feature.

Among the learners there were 5 males and 11 females with the most learners between 20 and 30 years of age. They had spent about 5 months in New Zealand, where most intended to study only for the duration of their language course. Their native languages were Chinese (1), French (1), German (2), Japanese (3), Korean (6), Russian (1), Spanish (1), and Turkish (1) with the number of the learners in the parenthesis.

3. Research Design

The research design was a process-product study in which the process of doing a grammar-discovery task and the product of a grammaticality judgment (GJ) test were to be compared. Since the focus was on relating the process of interaction to the outcome of interaction, and not solely on the outcome of interaction, no control group was used; the study was not an attempt to prove the efficacy of a particular task, but rather to probe the processes that it involved.

4. Development of Materials

The materials used for the study were developed through a series of pilot studies. None of the participants of the pilot studies took part in the main study.

1) Target Grammatical Structure

The target structure chosen was psychological verbs. Learners have problems when they use psychological verbs depending on the order of *experiencer* and *stimulus* (Burt, 1975). For example,

The teacher likes hard-working students.
 (*experiencer*) (*stimulus*)

However, the order is reversed with some specific verbs. For example,

This lesson bores the students.
 (*stimulus*) (*experiencer*)

When reverse psychological verbs are misused, learners make a sentence like:

The students bored the lesson.

where the sentence meaning is entirely obscured or changed.

2) Development of the Task and the GJ Test

A grammar-discovery task and a GJ test were developed around the target structure, and then piloted. The task was piloted by three pairs at upper intermediate level of proficiency, and then revised following the comments the learners provided. The revisions were mainly directed at easing understanding of the language used in the task and the clarity of the instructions on the sheet. The pilot study showed that the success of the task depended on careful listening to each other during the information exchange stage, and learners' ability and willingness to discuss grammar and discover the rules for themselves. Some learners in the pilot study were not able or not willing to do this. The pilot study also suggested that pairing the learners was important for the success of the task. In one pair which performed the task, one male student dominated the talk and the other female Asian student rarely had a turn and could not complete the task successfully.

On the GJ test, it was found that when learners were asked to correct the target sentences they judged ungrammatical, they corrected them using the passive voice instead of the target structure. Revisions were made to replace the words some learners did not know and to change the sentences which misled them to focus on other than the target structure.

5. Description of Instruments

1) Grammar-discovery Task

As learners would need to understand the difference between *experiencer* and *stimulus* in order to grasp psychological verbs, the grammar-discovery task began with a short

definition of these two terms, followed by an example. The learners received information about *experiencer* and *stimulus*. They were required to read it, and once they understood, one of the pair explained his or her term to his/her partner and vice versa. They were then asked to identify together the *experiencer* or *stimulus* in an example sentence. They read the information about the specific psychological verbs which require a different order of *experiencer* and *stimulus*. Then they were asked to talk with his/her partner about the explanation and give a summary of the explanation in their own words. They were asked to correct five incorrect sentences with the wrong order of *experiencer* and *stimulus*. The learners were asked to talk about the two sets of sentences, explaining the reason why the sentences marked as correct or incorrect were grammatical or ungrammatical. They were finally asked to write down sentences for the four psychological verbs with the unmarked order of *experiencer* and *stimulus* and for the five psychological verbs with the marked order of *experiencer* and *stimulus* in the sense that the use of these verbs (with the marked order) is more constrained than the other kind of the verbs. The learners were required to talk meaningfully about the target structure using their own linguistic resources. The task sheet is presented in the Appendix. The learners were audio-taped as they worked together to complete the task.

2) GJ Test

In order to evaluate the learning that resulted from the task, a GJ test was designed for the target structure. The test consisted of 36 decontextualized sentences with the same number of correct and incorrect sentences. A total of 11 psychological verbs were used to make 22 target structure sentences. A total of seven different grammatical features were used to make 14 distractor sentences. The learners were required to discriminate between the correct and incorrect sentences and to provide the correct version of the ungrammatical sentences. Each of the ungrammatical sentences in the test contained only one error. The sentences used in the test were not controlled for length as long as they were semantically acceptable.

The grammar-discovery task introduced seven psychological verbs that require the marked (that is, the reverse) order of *experiencer* and *stimulus*. These were *bore*, *surprise*, *annoy*, *worry*, *disappoint*, *interest*, and *satisfy*. The GJ test included sentences with all of these seven verbs, together with four new verbs: *bother*, *impress*, *excite*, and *shock*. Since the most common error made by learners relating to this structure is to reverse the order of *experiencer* and *stimulus*, the GJ test focused on this error. Erroneous use of this structure contained sentences such as:

**The committee surprised his decision.*

6. Data Collection Procedures

Before the collection of the data, the learners were asked to fill out the Learner Questionnaire about themselves. The data collection procedures for the 8 pairs were as follows: First, the researcher met each pair and explained to them that they needed to take a pre-test in order to see how familiar they already were with the target structure. At this point they were not told what the target structure was. No time limit for the completion of the pre-GJ test was imposed, but learners were not allowed to change their responses. Learners practiced with three example sentences for the test.

The pairs took about 20-25 minutes when they performed the grammar-discovery task. Each learner received a separate task sheet. The researcher explained how to perform the task and went over the instruction with them, clarifying any questions that arose. The researcher paired the learners from more or less homogeneous backgrounds and emphasized the importance of working together with their partner to avoid the problems found in the pilot study. The audio recording started once they indicated that they understood the instructions. The learners took the post-GJ test immediately after the task performance. The audio recording was transcribed using a broad orthography.

7. Measures: GJ and EC Sections

In the GJ tests the learners were required to distinguish between the grammatical and ungrammatical sentences and correct the errors when they judged the sentence ungrammatical. Each learner was given two scores for each test: a score for judging the grammaticality of the sentences and a score for error correction (EC). For the purposes of the statistical analyses, the grammaticality judgment (GJ) and the EC scores of the GJ tests were treated as two separate scores.

The learners were awarded a score of 1 each time they judged a sentence correctly, giving a total possible GJ score of 36. For the EC section, the learners were awarded a score of 1 each time they changed a sentence correctly using the target structure. When they corrected the sentence using a passive voice, they were not given a score. The total possible EC score was 18.

IV. DATA ANALYSIS AND RESULTS

1. Research Question 1

For research question 1, the occasions on which focus on the target structure was taking

place were identified in the transcripts of the pair work. The focus on the target structure was operationalized as the occasions when the learners put the sentences with target structure into question and discussed them. These occasions were similar to ‘noticing with metalinguistic awareness’ (Leow, 1997) and ‘elaborate noticing’ (Kuiken & Vedder, 2002).

In the grammar-discovery task, there were two sentences containing the target structure presented in the task sheet. In addition, the learners were required to correct four incorrect sentences containing the target structure, and to make up five new sentences using the target structure. There were, therefore, 11 occasions where the target structure could have been discussed by the learners.

The discussion score was calculated as follows: each pair was given 2 points when linguistic problem solved correctly, 1 point when linguistic problem discussed but disagreement about problem solution, and 0 point when there was no discussion. The total possible discussion score was 22. Each pair was usually scored 2 or 0 and there was only one instance in Pair 1 when two learners in the pair did not agree on the solution.

The discussion score by each pair was calculated and identified as a percentage figure to show the extent to which learners are engaged in discussing the target structure. The data was then analyzed to examine if there was any relationship between the discussion score and gains in learning after the task performance. A correlation analysis was performed for this purpose. Only the scores of the target sentences not the distractor sentences in the GJ and EC sections were considered for the statistical analysis.

1) The Extent to Which Learners Are Engaged in Discussing the Target Structure

The discussion scores ranged from 15 out of 22 (68.18%) to 2 (9.09%) the average being 48.30%. While there was a large difference between pairs, all pairs discussed the first sentence in the task sheet probably because they needed to talk about two key terms of *experiencer* and *stimulus* to understand psychological verbs. The second mostly discussed occasion was when the learners corrected an incorrect sentence with the psychological verb, *worry* probably because the learners had more difficulty with this verb. The discussion scores are presented along with learners’ pre-test scores of the GJ and the EC in Table 1. Gain scores in the table means the score difference between the pre-test and the immediate post-test after the task performance.

2) The Relationship between the Discussion Scores and Gains in Learning

A correlation analysis was performed between a pair’s discussion scores and their joint gains to examine if there was any relationship between the extent to which the learners were engaged in discussing the target structure and learning that results. There was no

obvious effect that the extent to which learners discussed the target structure had on gains in learning. The results are presented in Table 2.

TABLE 1
Discussion Scores, Pre-test Scores, and Gains in Learning

Pair No.	Learner No.	Scores of Discussion(%)	Pre-test		Gains	
			GJ	EC	GJ	EC
1	L01	15(68.18)	13	0	-2	0
	L07		14	1	6	9
2	L02	14(63.64)	18	0	3	11
	L10		14	0	7	11
3	L03	12(54.55)	6	0	14	9
	L04		13	0	7	11
4	L05	8(36.36)	17	5	4	5
	L11		16	0	5	11
5	L06	10(45.45)	18	0	4	11
	L16		11	0	11	11
6	L08	14(63.64)	18	0	3	11
	L14		11	0	6	8
7	L12	10(45.45)	21	0	0	10
	L15		10	0	5	0
8	L13	2(9.09)	19	0	2	10
	L17		22	0	0	11

TABLE 2
The Relationship between the Discussion Scores and Gains in Learning

		Mutual GJ Gains	Mutual EC Gains
Discussion Scores	Pearson Correlation	.310	-.244
	Sig (2-tailed)	.455	.561
	N	8	8

As seen from Table 2, there appeared to be a weak nonsignificant correlation between the extent to which the learners discuss the rule and gain scores. This was true for both the GJ and the EC components, indicating that neither of these was affected by the extent to which learners discussed the target structure.

2. Research Question 2

Scaffolding refers to a joint process constructed on the basis of the learner's need. Help is generated as a joint effort and through the supportive condition created in social interaction by the novice and the expert. Through scaffolding the participants construct the

ZPD and thereby foster learning.

The transcripts were analyzed for instances of such scaffolded assistance in pair work. There appeared to be evidence of scaffolding in the talk between all pairs of learners. The types of scaffolding were adapted from Mohamed (2001) and Ellis (2003). Learners scaffolded each other's performance via requests, explanations, and corrections. In the example below, L1 and L7 represent the speakers.

Example 1

- 1 L7: I think the stimulus is, you said, *laziness*.
- 2 L1: Yeah. *His mother* is experiencer. The correct sentence is *Andy's laziness worries his mother*.
- 3 L7: But the stimulus goes to the end of the sentence.
- 4 L1: I don't know. Yeah, stimulus is in the beginning of the sentence experiencer and ... yeah.
- 5 L7: I spoke that the stimulus is always the end of the sentence but I am not sure.
- 6 L1: The example sentence *The workers annoyed the new policy* it's incorrect sentence? And *the new policy* is the stimulate stimulus *workers* is the experiencer? And the correct sentence is *the new policy*, stimulus is in the beginning of the sentence *workers* experiencer is at the end of the sentence. Stimulus can be in the beginning of the sentence.
- 7 L7: I thought the stimulus is at the end of the sentence. I don't know why.

Although it is not clear that L7's utterance in turns 3 and 5 is self-directed or an attempt to invite his partner's contribution, it triggered L1's help. L1 did not know the answer for the problem raised by L7 in turn 4, but tried to figure it out in turn 6. L7 accepted L1's suggestion in turn 7. Here, two learners engaged each other's contribution and reached a solution to the problem they encountered.

Repetition, used by Pairs 3 and 6, refers to one student repeating what the other has said during the discussion. According to DiCamilla and Anton (1997, cited in Ellis, 2003) this serves to give the members of a dyad a kind of joint ownership by ensuring that they work with a shared perspective. The following extract illustrates such an incident. The repeated parts are presented underlined.

Example 2

- L4: What is experiencer? Change swap.
- L3: Ah, opposite. So the first one is Wendy's parents.
- L4: Wendy's parents. We can changed the news annoy annoyed me. annoyed, worried, bored, interested, satisfied, surprised.

L3: Yeah. annoyed, worried, bored, interested, satisfied, surprised. So, if ... if this is hmm person or thing, it's experiencer ah following this one is a verb. It describe somebody's feeling and a use a *-ed* word and plus *-ed*. And so, hmm if you feel if you cause if you feel something or you get something from the another thing you are the experiencer.

In the extract above both learners in Pair 3 repeated after his or her fellow learner. However, at other places in the transcript it is L3 who repeated after her partner most of the time. In the Example 3 below, L14 in Pair 6 continuously repeated after her partner.

Example 3

L8: Experiencer feeling something from stimulus.

L14: stimulus

L8: Experiencer feel something ..., right? (laugh)

L14: Yeah, feel something from

L8: Experiencer feel something from or because of stimulus. (read the instruction D)

This case stimulator must be first subject.

L14: Yeah, subject

Another example is drawn from the same pair.

Example 4

L8: *parents*. Ah, *presents* (laugh) I'm sorry. It's *presents*. The presents is stimulus. *The presents satisfied the children*.

L14: the children. The presents is the stimulus, isn't it? And *the children* (pause) because ah ... because the meaning is different, isn't it?

L8: You can't use in this verb. If you want to use this form, you can't use it this form first. You should change be + verb.

L14: So be + verb.

L8: If you want to use this form of sentence this structure, *The students are ah were bored the lesson*.

Here the learners have actually scaffolded each other to the wrong sentence—*The students are ah were bored the lesson*—showing that scaffolding does not always lead the learners to formulate correct language.

The next type of scaffolding that was evident in the data involved one learner requesting the opinion of the other. L14 often uses a tag question probably because the explanation on the task sheet is not clear to her. In this pair L8 takes on the role of expert and L14 that of

novice.

Example 5

L14: I think that is experiencer of feeling so like person or thing, so I think *disappointed* is the experiencer, isn't it?

L8: *disappointed?*

L14: Yeah.

L8: No. (laugh) It must be *the news* or *Wendy's parents*.

L14: Ah, really.

When learners were requested about their opinion, they provided feedback to their partner by simply agreeing, disagreeing, or correcting.

Another strategy of scaffolding is correction. This feature is presented in the talk of many pairs. Learners corrected each other's understanding and grammar.

Example 6

L1: The experiencer is *latecomer*.

L7: Yep. No. The stimulus is *latecomers*. I think the example *latecomers* is stimulus and *the boss* is feeling.

L1: OK. Maybe. Yeah, yeah. The boss feel angry experiencer. *The latecomer* is stimulus that's the reason why. OK. Yeah. OK. Because he got angry. (laugh)

The other scaffolding strategy that was frequently used was requesting information. Learners request each other's assistance by asking for some information to be provided: information that they do not have or do not understand.

Example 7

L11: How do you pronounce this?

L5: I am not sure [stimulus]. I'm not sure.

In the example above, L11 does not know how to pronounce *stimulus* and therefore asks L5 to provide that information.

There was only one incident where one learner offered guided scaffolded support to her partner. Guided support refers to a situation where a knowledgeable participant provides help to the level needed by the novice by moving gradually, using prompts (Nassaji & Swain, 2000). Such guided support occurred in Pair 7.

Example 8

L15: I see. experiencer? Experiencer is the person ... hmm. Can I read this experiencer?

(laugh)

L12: Yes, you can use this example.

L15: *The experiencer is the person that experiences a feeling.*

L12: (laugh) example. So what do you think is the experiencer?

L15: Aah.

L12: *the news* or *Wendy's parents*?

L15: *Wendy's parents*

L12: Yeah, stimulus *the news* is the stimulus. (pause)

L15: We have to do this one?

L15 keeps asking what she needs to do throughout the task. In the example above, she asks her partner if she can just read the explanation provided on the task sheet after being unable to figure out how to perform the task. L12 first states that L15 can use the example presented on the task sheet. She then asks L15 what she thinks the *experiencer* is and guides her to choose one from the two possible answers for the question. Through this guided question, L15 was able to proceed the task.

Explanation of the grammatical structure between learners was observed in the talk of six pairs. Example 9 represents such an incident in Pair 8.

Example 9

L17: How about stimulus?

L13: stimulus, ah ... (pause) Could you tell me what experiencer is? Could you tell me what example?

L17: Ah ... for experiencer?

L13: and stimulus

L17: Stimulus, too. Experiencer and stimulus are in the sentence. You can ... in this sentence *the boss* is who experiences the feeling who has the feeling *dislike*. This *latecomers* is stimulus because *latecomers* is the thing that cause the feeling, *dislike*. So *latecomers*, *latecomers* made *the boss* feel bad.

L13: Ah, yeah, yeah. (pause)

L17: So for example, I can give you another example. *The teacher dislike the students who didn't do their homework.*

L13: The experiencer is *the teacher*.

L17: Yeah, yeah.

L13: Stimulus is *students*.

L17: Yeah. *The news disappointed Wendy's parents*. What is experiencer? Can you tell

me what is the experiencer?

L13: *Wendy's parents.*

L17: *Wendy's parents were disappointed with the news.*

L13: OK.

Here L17, asked by L13, explains to her what the *experiencer* is and what the *stimulus* is in the sentence in the task sheet. In sociocultural terms, L17 is orienting L13 to a shared understanding. L13 follows her explanation and regulates the interaction by signaling her understanding, and arrives at the same orientation as L17 in the final line of the extract.

L13 and L17 are friends and were paired up. L13 assigned the role of expert to her partner throughout the different stages of the task. She herself takes on the role of novice and continues to engage L17 to explain probably because she thinks L17's skill of speaking English is better than hers as mentioned later in the transcript. This pair was different from the pair in the example 8 in which L12 herself took on the discourse role of expert, and assisted her novice partner.

The example below is another incident of scaffolding through explanation. It shows the two learners in Pair 2 sharing a more or less equal role rather than taking on a role of expert or novice, with each providing his or her own rule.

Example 10

L2: What is stimulus?

L10: The experiencer is this person ...

L2: I think so. Experiencer are *the parents*. This is true. I think so.

L10: Yeah. But the experiencer is this person.

L2: And stimulus is, I think Wendy talked to them about the news. The parents got disappointed so the experiencer is parents. The stimulus is Wendy. You don't think so?

L10: No. The stimulus is this thing.

L2: or person

L10: or person? Yeah.

L2: If you compare *the boss dislike latecomers*. *Latecomers* is the person. Just maybe I am wrong of course.

L10: The experiencer is *parents of Wendy*. I am sure the stimulus is *news* I think.

L2: OK. I agree. Let's say *news*.

L10: I am not sure.

L2: Me, too. Let's say *news* but actually I still think I don't know why but I think *Wendy* because they need a reason to gain experience. That is the reason for it. *The news*

doesn't won't come by itself. Someone must bring the news (pause) on the other hand.

L10: Yes. But the other example the experienter then *latecomers*. Here opposite *parents of Wendy news* the feeling what is the thing? What make this feeling? The thing is the *news*.

L2: Yes. But who brought the news? I am not just sure about this.

L10: (laugh) The experienter are the *parents of Wendy*. We agree we have the same meaning. OK?

L2: Yes, OK. I agree.

Both learners are trying to express their own reasons, and put forward an answer. Unlike the previous examples where one learner was more passive, both L2 and L10 jointly arrived at a solution through collective scaffolding.

Of eight pairs, there were five pairs where no dominant learner was observed. The type of interactions found in these pairs was close to that of 'collaborative' among the four patterns Storch (2002) identified. There was moderate to high equality (i.e. level of authority over the task) and moderate to high mutuality (i.e. level of engagement with each other's contribution) between learners in pair. Learners did not impose their opinion, but were willing to offer and engaged with each other's idea.

In the other three pairs (Pairs 6, 7, 8) the pattern of interactions was an 'expert/novice relationship' (Storch, 2002), where one learner assumed or was afforded the role of expert and led the task. The expert sought to involve the novice in the interaction and provided assistance that would help the novice learn from the interaction. For example, L17 in Pair 8 dominated the talk but was not necessarily authoritarian and attempted to involve L13 in the task. L13's role was limited or passive but she sought assistance and accepted suggestions from L17. Table 3 lists the scaffolding strategies employed by pairs.

TABLE 3
Type of Scaffolding of the Pairs

Type of Scaffolding	Pair 1	Pair 2	Pair 3	Pair 4	Pair 5	Pair 6	Pair 7	Pair 8
Correction	*	*	*	*	*	*		*
Explanation	*	*	*	*			*	*
Guided Support							*	
Information Request	*	*		*	*	*	*	*
Opinion Request		*	*		*	*	*	
Repetition			*			*		

V. DISCUSSION

1. Research Question 1

The instances of discussion of the target structure in the transcripts demonstrate that learners ‘attended to’ the target structure, as Schmidt (1990) might say, during dyadic dialogue. ‘Attended to,’ in this study, meant discussed by the learners. It is clear from the examples that they were aware of the linguistic problem and that noticing of the target structure had taken place as a result of interaction when completing a grammar-discovery task. However, the learners varied in the extent to which they were engaged in discussing the target structure.

It is noteworthy that the extent to which learners were engaged in the discussion of the target structure did not seem to affect their gains in learning when a pair’s gain scores were considered jointly. While it is assumed that having the opportunity to discuss rules is a strong factor in leading to higher gains in learning by way of drawing learners’ attention to the linguistic properties, there appeared to be no obvious relationship between discussing the target structure and obtaining higher gains in learning. Pair 1, for example, was engaged in discussing the rule most of the occasions (68.18%). Nevertheless, it was Pair 1 who achieved the least gains in learning when both learners’ total gain scores were considered. Similarly, although Pair 8 discussed the rule least of the occasions (9.09%), their total gains in learning as a pair was almost the highest in the case of EC score. Most learners showed improvement in learning following task performance. The gain scores of some learners (e.g. L12, L13, and L17 for GJ gains) are lower than others (e.g. L3) as the former achieved better results in the pre-test and had therefore less room to improve than those who had performed poorly in the pre-test.

The lack of relationship between the amount of discussion of the target structure and gain scores can be explained within the framework of SCT. Example 11 shows the work of Pair 8, who did not discuss very much but who improved their performance on the post-test.

Example 11

L17: The experiencer of a sentence is the person or thing that experiences a feeling. For example, in the sentence, *the boss disliked latecomers* the experiencer is *the boss* and ...

L13: *the boss?*

L17: Yeah.

L13: What is *latecomers*?

L17: *Latecomers* mean people who comes who come lately.

L13: Ah, OK, OK. (pause to read)

L17: How about stimulus?

L13: Stimulus, ah ... (pause) Could you tell me what experienter is? Could you tell me what example?

L17: Ah ... for experienter?

L13: and stimulus

L17 took turn explaining the *experienter*. It was L13 who should have explained what *stimulus* was. L13, instead, asked L17 to tell her about *experienter* and *stimulus* as well. In the task sheet the learners were required to take turns to talk about *experienter* and *stimulus* to their partner. L13's activity departs from the intended task. L13 constantly engaged L17 to explain the linguistic problem they had to deal with collaboratively. All throughout the discussion it was L17 who talked most of the time as evidenced by the amount of words uttered by L17 (724 – 75.89%) compared to that of L13 (230 – 24.11%). Their talk consisted of L17's long turn and their discussions in the obligatory occasions happened to focus on other structure than the target structure.

L13 was not willing to initiate and participate overtly in the dialogue and instead took on the role of novice. Some learners like L13 may have a non-interactive or passive approach to learning. Although L13 did not play an active role in explaining the target structure, she did have access to L17's correct explanation of the target structure, and it is this exposure to the correct explanation of the target structure that led them to achieve equal high gains in learning. This was in line with the study conducted by Dobinson (2001), although not conducted within the framework of SCT. His study found that learners could benefit from the interaction in the lesson without necessarily being involved in it. Covert participation in the interaction appeared as effective as overt participation in aiding learning. "Participation can be limited to covert participation or 'intra-action' and still be of benefit" (p. 206). This therefore suggests that the learner who plays an active role in the interaction does not necessarily learn more than the learner who works with him or her does. If learners work together on the task, they both reap the benefits of it regardless of who participates in a more active role.

Similarly, L12 and L15 in Pair 7 assumed a role of expert and novice respectively during dyadic discussion. Although they talked about the linguistic problem around the target structure (45.45% of the occasions), L15 did not achieve any gain in the EC while L12 achieved gains (10 points). Unlike L13 in Pair 8, L15 could not benefit from the talk. In the example below,

Example 12

1 L12: Yeah. I think there are some verbs belong to this theory so *disappoint*, *annoy*,

worry, bore, interest, satisfy, surprise so maybe stimulus *disappoints* the experiencer but we want to use experiencer as subject the structure of sentence different from different so if I want to use I am experiencer *I was disappointed by my result*.

- 2 L15: But if we use *the result*, *The result is disappointed*?
- 3 L12: No. We can use *the result* but a little bit strange.
- 4 L15: Yeah, I think so.
- 5 L12: You want to use stimulate as the subject stimulate *disappoint* experiencer.
- 6 L15: *annoy*
- 7 L12: For example, *annoyed* or *annoys* present, principle or past.
- 8 L15: *I am annoyed*. How about stimulus?
- 9 L12: Maybe we can use present continuous in this situation. *This is annoying me now*. For example, *you annoy me*. *I am annoyed by you*.
- 10 L15: How about *always*?
- 11 L12: *always*? What is *always*?
- 12 L15: You said *this is annoying for me*. It means now.
- 13 L12: Now, yeah. *Always this annoys me*.
- 14 L15: Aah.

L12 explained the linguistic problem in turn 1. L15's response in turn 2 shows that she did not understand the explanation. L12 explained the target form in turn 5 again but L15 still did not attend to the target form. The talk then was not focused on the target structure and drifted away. L12, although she assumed a role of an expert in this pair, was unable to scaffold the task effectively for her novice partner. The two learners were engaged in discussion of the linguistic problem but L15 did not achieve as many gains as L12 (see Table 1) because it was not effective.

When scaffolding failed to construct a ZPD for a learner, learning did not result (Nassaji & Swain, 2000). The excerpt was further in line with Swain and Lapkin (1998) who showed that peer-peer dialogue is not always effective. This therefore suggests that there will be occasions when the mediation provided by an expert language user is required to negotiate a learner's ZPD for the interaction to be more effective.

2. Research Question 2

Although learners varied in the extent to which they participated in pair work, they appeared fairly positively disposed to pair work. More importantly, the learners when working in pairs can scaffold each other's performance by using a variety of scaffolding strategies. Such scaffolding in the present study occurred either in a 'collaborative' pattern

or an 'expert/novice relationship,' whose pattern of dyadic interaction, Storch (2002) suggests, are more conducive to language learning than the other two patterns she identified. However, the researcher found that some pairs in the pilot study rarely focused on the same task and were not aware of the linguistic problem presented in the task. Thus pair work or group work could be less effective for language learning than is often claimed. Teachers and researchers will need to take every effort for pair work or group work to be effective for language learning to take place.

There was a mixed group of learners from European and Asian backgrounds in the study. The interaction between learners from European backgrounds (Pairs 1, 2, 5) took the pattern of 'collaborative' but the learners of three pairs (Pairs 6, 7, 8) who showed an 'expert/novice relationship' were all from Asian backgrounds. One pair of two learners from European and Asian backgrounds in the pilot study showed a 'dominant/passive' pattern. As Storch (2002) showed, the dominant participant in that dyad took an authoritarian stance and the other adopted a more passive role. More importantly, the passive participant ended up with no gain in learning. Learners from Asian backgrounds are well known to have a more noninteractive or passive approach to learning. This seems to have some implications for pair or group allocation. While Kowal and Swain (1994) reported that heterogeneous group worked less effectively together, teachers or researchers will need to consider each learner's personality or learning style when assigning learners in pairs or small groups.

VI. CONCLUSION

The study was motivated by lack of research which has investigated the process of performing grammar-discovery tasks and further by SCT which suggests that the study of dialogic interactions during task performance will provide a window for viewing the cognitive processes the learners are internalizing.

In examining the process of a grammar-discovery task, the first interest was if learners focus on the target structure when they are engaged in dyadic dialogue. This was investigated by identifying the occasions when the learners were engaged in discussing the target structure. It was hypothesized that discussion of the target structure will lead to higher gains in learning by way of drawing learners' attention to the linguistic problem the learners encountered. Most learners achieved gains after task performance. However, there was no positive link between the extent to which the learners discussed the target form and gains in learning.

The results all together suggest that language learning can be enhanced by the presence of interaction as manifested by the gains after task performance. It is thus suggested that

interaction can have a role in L2 learning. The results, however, showed a large degree of idiosyncrasy in learning. The learner who plays an active role in the interaction does not necessarily learn more than the learner who works with him or her does. Some learners do not need to be actively involved in the interaction in order to benefit from it. If learners work together on the task and are exposed to the correct explanation of L2 data, they both reap the benefits of it regardless of who participates in a more active role. Furthermore, the results suggest that there will be occasions when the mediation provided by an expert language user is required to negotiate a learner's ZPD for learning to occur because the peer-peer interaction is not always effective. These findings confirm the importance of paying attention to the nature of pair interaction for the learning opportunities available to the learners and have implications for L2 learning as SCT researchers maintain.

All 8 transcriptions displayed evidence of scaffolding in various forms, indicating that the learners approached the task in a mutual, collaborative orientation. The analysis further showed that members of the dyad engaged in co-construction of knowledge through collaboration with their peers. While this knowledge building is not a guarantee that the target structures have been fully acquired, the task has helped to start this process of internalization. The learners appear to be able to draw on collective resources to solve the linguistic problem they encountered and provide assistance that will help their peers learn from the interaction. This supports the theoretical perspective of group/pair work (Long & Porter, 1985), and implies that every opportunity should be created for learners to interact in addition to providing an input-rich environment.

Some limitations of this study have to be taken into account. First, the study made use of a fairly small sample of learners and learners were from different L1 backgrounds. The results may be different with the learners who share the same L1. When learners have the opportunity to discuss the task with their mother tongue, this may affect their task performance. The focus of the study was narrowly grammatical like most studies that have examined grammar-discovery tasks. The findings of this study may not be applicable to other aspects of language (e.g. morphology or discourse).

The importance of learners attending to form during task performance is well established (Ellis, 2003). However, there is little research that addresses the issue—Does noticing arise in learner-learner interaction? This study was an initial consideration of the issue of investigating the extent of attending to form and its relationship to language learning. Only whether the target structure was discussed rather than the quality of the discussion was considered. In future research, a more fine-grained analysis of the nature of the interaction which is taking place during dyadic discussion of grammar-discovery tasks or other problem-solving tasks should reveal how discussions between learners lead to more noticing and, in the end, to internalization of target structures.

Learners performing a grammar-discovery task had the opportunity to learn about

grammar while taking part in interaction centered on the linguistic problem. The task employed in the present study encouraged an active, discovery-oriented approach on the part of the learners as manifested by the rich tapestry of learners' scaffolding. Grammar-discovery tasks, with its twin focus on form and meaning, offer an appealing area for further study. Future research will need to address a number of issues including (a) developing different formats of grammar-discovery tasks (b) examining the effect of these different formats on the quality and quantity of learner interaction in addition to examining the effect of the different formats on gains in learning.

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APPENDIX
Grammar-discovery Task

Student A

Name: _____

A. Can you tell your partner about what the *experiencer* is?

- a. The *experiencer* of a sentence, is the person/thing that experiences a feeling.
- b. The *stimulus* of a sentence, is the person/thing that causes someone/something to feel something.

Example: *The boss disliked latecomers.*
(*experiencer*) (stimulus)

Talk with your partner.

Example: *The news disappointed Wendy's parents.*

In this example sentence, what is the *experiencer*? _____
What is the *stimulus*? _____

B. There are a group of verbs that require the order of *experiencer* and *stimulus* as in the example sentence below.

Example: *The news disappointed Wendy's parents.*
(stimulus) (experiencer)

Here, *The news* is the *stimulus* not the *experiencer* even though it comes first in the sentence. *The news* causes the feeling, *disappoint* to the *experiencer*, *Wendy's parents*. The verbs which belong to this group are as follows.

disappoint, annoy, worry, bore, interest, satisfy, surprise

C. Talk with your partner about this explanation until you are clear about it. Then give a summary of the explanation in your own words. _____

D. The following sentences are all incorrect. Correct the sentences following the example in 1, and then check them with your partner.

Incorrect

Correct

- 1. The workers **annoyed** the new policy. ex) *The new policy annoyed the workers.*
- 2. Andy's mother **worried** his laziness. _____
- 3. The students **bored** the lesson. _____
- 4. The audience **interested** the presentation. _____
- 5. The children **satisfied** the presents. _____

Talk with your partner why the sentences on the left are incorrect and why the sentences on the right are correct. _____

E. Working together with your partner, write a sentence of your own for each of the following verbs, with the correct order of *experiencer* and *stimulus*.

- | <i>(experiencer)</i> | verb | <i>(stimulus)</i> |
|----------------------|-----------|-------------------|
| 1. | love(d) | |
| 2. | hate(d) | |
| 3. | enjoy(ed) | |
| 4. | envy(ied) | |

- | <i>(stimulus)</i> | verb | <i>(experiencer)</i> |
|-------------------|----------------|----------------------|
| 1. | surprise(d) | |
| 2. | annoy(ed) | |
| 3. | worry(ied) | |
| 4. | disappoint(ed) | |
| 5. | interest(ed) | |

Applicable levels: tertiary

Key words: grammar-discovery task, interaction, sociocultural theory

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Received in February, 2006

Reviewed in March, 2006

Revised version received in May, 2006