COLLABORATIVE DIALOGUE:
ITS CONTRIBUTION TO SECOND LANGUAGE LEARNING*

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INTRODUCTION

Let me start by asking the question "What is 'collaborative dialogue'?". It is the joint construction of language –or knowledge about language– by two or more individuals; it's what allows performance to outstrip competence; it's where language use and language learning can co-occur.

But those are the claims I would like to end this essay with. To get there, I'd like to take the following steps. First, in order to locate collaborative dialogue in theoretical and empirical claims about second language learning, I'll examine current views on the role of interaction –and its components of input and output– in second language learning. Second, to see what it might illuminate, I'd like to shift the frame of reference somewhat by considering interaction from a Vygotskian perspective. Third, I'll consider several recent studies from this perspective. These studies suggest that at least some language learning can be located in the dialogues themselves, and that, as well as the separate consideration of input and output, a profitable unit of analysis of language learning and its associated processes may be dialogue.

Let me begin, then, with a brief overview of recent views of the role of interaction in second language learning. To a considerable extent, contemporary thinking and research about interaction has emphasized its role as a "provider of input" to learners. This focus has its origins in Krashen's comprehensible input hypothesis –the hypothesis that the *cause* of second language acquisition is input that is understood by the learner. Input, it has been argued, can be made comprehensible in a number of ways. Long, in the early 80's (e.g. 1980, 1981, 1983), proposed that one way input is made comprehensible is through "interactional modification", that is through modifications to learners' input as a consequence of their having signalled a lack of comprehension.

As Pica points out in a 1994 review article in *Language Learning*, this "modification and restructuring of interaction that occurs when learners and their interlocu-

tors anticipate, perceive, or experience difficulties in message comprehensibility",
has been referred to as *negotiation*. Through negotiation, comprehensibility is achieved
as interlocutors repeat and rephrase for their conversational partners. Pica points out
that negotiation is not the only type of interaction that might lead to learning, "But",
she states, "negotiation, with its emphasis on achieving comprehensibility of mes-
sage meaning ... has sparked and sustained considerably more interest in the field of
SLA." (p. 495).

In research on negotiation, then, the focus has been on input, and how to make it
comprehensible. Because of the theoretical framework in which this research has
been embedded, it has been seen as enough to demonstrate that negotiation leads to
greater comprehensibility of input. Virtually no research has demonstrated that the
greater comprehensibility achieved through negotiation leads to second language learn-
ing. Indeed, Ellis, Tanaka, and Yamazaki claim in a paper published in l994 that they
have provided "the first clear evidence that access to modified input promotes acqui-
sition." (p. 481). This research was concerned with the acquisition of vocabulary.
They conclude as follows: "Although our studies support a causative relationship
between negotiated interaction and acquisition, we acknowledge ... the fact that dif-
ferent aspects of language (phonology, vocabulary, morphology, and syntax) may not
be acquired in the same way. Our studies examined only vocabulary acquisition, and
only the acquisition of the meaning of concrete nouns. It does not follow that negoti-
ated interaction will promote the acquisition of other aspects of the L2 or even that it
is important in other aspects of vocabulary acquisition." (p. 482).

Clearly further research exploring the relationship between comprehensible in-
put and second language learning is essential. However, if we are to fully understand
the language learning that occurs through interaction, the focus of our research needs
to be broadened. We need to look beyond the comprehension of input to other aspects
of interaction that may be implicated in second language learning. For example,
Doughty (l994), Lightbown and Spada (l990) and others are exploring how interac-
tion provides opportunities for learners not only to negotiate the message of the input,
but, in doing so, to focus on its form as well. Other researchers, for example, Aljafreh
and Lantolf (l994), are exploring the nature and type of feedback that will be most
helpful to learners during interaction at different stages of their acquisition of a lan-
guage form.

But negotiation is more than a source of comprehensible input, sometimes pro-
vided in ways that can draw attention to form, or input as a source of feedback. Nego-
tiation also provides learners with the opportunity to 'output'.

I suggested, back in l985, that perhaps output plays a role in second language
learning (Swain, l985). The basis for this claim was our research with French immer-
sion students which showed that in spite of six or seven years of comprehensible
input in French, the written and spoken French of immersion students included nu-
merous grammatical and syntactic deviations from native-speaker usage. Further-
more, our observations in grades three and six immersion classes suggested that al-
though students used French in class, little of it included extended discourse, and,
generally speaking, teachers did not "push" their students beyond their current level
of interlanguage as they interacted with them.

It seemed to me that the importance to learning of output could be that output
pushes learners to process language more deeply –with more mental effort– than
does input. With output, the learner is in control. In speaking or writing, learners can

"stretch" their interlanguage to meet communicative goals. To produce, learners need to do something; they need to create linguistic form and meaning and in so doing, discover what they can and cannot do. Output may stimulate learners to move from the semantic, open-ended, nondeterministic, strategic processing prevalent in comprehension to the complete grammatical processing needed for accurate production. Output, thus, would seem to have a potentially significant role in the development of syntax and morphology. These characteristics of output provide a justification for its separate consideration, both theoretically and empirically, in an examination of the value of negotiation for second language learning.

Relative to the potential roles of input in second language learning, those of output have been underexplored. For that reason, I would like to examine them in a bit more detail, both to balance the emphasis of the last decade on input, and as a way of leading into a discussion of collaborative dialogue.

It has been suggested that output may serve second language learning in at least four ways (Swain, 1995). One function of producing the target language, in the sense of "practising it", is that it enhances fluency. This seems non-controversial, particularly if it is not confused with the adage that "practice makes perfect".

The other hypothesized functions of output relate more to accuracy than fluency. These other functions are: (1) the "noticing/triggering" function (a "consciousness-raising" role); (2) the hypothesis testing function; and (3) the metalinguistic function (reflective role). (Swain, 1995). I'd like now to look at these three functions briefly.

We (Swain and Lapkin, 1995) have argued, based on evidence from immersion children, that output promotes "noticing". Schmidt and Frota (l986) offer a "notice the gap principle" which states that "second language learners will begin to acquire the targetlike form if it is present in comprehended input and "noticed" in the normal sense of the word, that is consciously" (p. 311). According to our argument, in producing the target language (vocally or subvocally) learners may notice a gap between what they *want* to say and what they *can* say leading them to recognize what they do not know, or know only partially. In other words, under some circumstances, the activity of producing the target language prompts second language learners to consciously recognize some of their linguistic problems; it brings to their attention something they need to discover about their second language. This may trigger cognitive processes which can generate linguistic knowledge that is new for the learner, or that consolidate their existing knowledge.

To test this hypothesis, one would need to demonstrate that learners may, on occasion, notice a problem even without external cueing through, for example, implicit or explicit feedback provided from an interlocutor about problems in the learners' output. The communicative strategy literature (e.g. Tarone,l977; Faerch and Kasper, l983; Bialystok, l990) certainly indicates that learners do notice problems as they speak, and that sometimes they do try to do something about them.

In a recent study (Swain and Lapkin, 1995), we attempted to examine if young learners did notice problems in their output as they were trying to produce the target language, and if so, what cognitive processes were activated as they tried to solve them. The participants in the study were grade eight early French immersion students (average age = 13). The students were individually trained to use think aloud procedures, and were then asked to think aloud while writing an article for a newspaper. Students were prompted with "what are you thinking?" if they stopped talking for very long, or if they made a change to their text without commenting on it. Students

were advised that they could not have access to a dictionary or any other aid, and that the researcher would not be able to help either. These last conditions were imposed because we were interested in seeing what students would do without further input from external sources; whether they would try to work out solutions on their own.

The results demonstrate quite clearly that even second language learners as young as these students do indeed, as they produce their L2, notice gaps in their linguistic knowledge. OUTPUT LED TO NOTICING. Furthermore, when these learners encounter difficulties in producing the target language, they DO engage in thought processes of a sort which may play a role in second language learning (see also Cumming, l990; Wood, l994): processes such as extending first language knowledge to second language contexts; extending second language knowledge to new target language contexts, and formulating and testing hypotheses about linguistic forms and functions (see e.g., Selinker, l972; Corder, l981; Kellerman and Sharwood Smith, l986; McLaughlin, l987).

It is our conclusion that this evidence supports the hypothesis that output can stimulate noticing; that it raises learners' awareness of gaps in their knowledge; in short, that it plays a consciousness-raising function. Furthermore, noticing can trigger cognitive processes that have been implicated in second language learning; cognitive processes that generate linguistic knowledge that is new for the learner, or that consolidate existing knowledge.

Another way in which producing language may serve the language learning process is through hypothesis testing. It has been argued that some errors which appear in learners' written and spoken production reveal hypotheses held by them about how the target language works. To test a hypothesis, learners need to DO something, and one way of doing this is to say or write something.

If learners were not testing hypotheses, then changes in their output would not be expected following feedback. However, recent research (e.g. Pica et al., l989; Iwashita, l993) demonstrates that during the process of negotiating meaning, learners will modify their output in response to such conversational moves as clarification requests or confirmation checks. For example, Pica and her colleagues (l989) found that in response to clarification and confirmation requests, over one-third of the learners' utterances were modified either semantically or morphosyntactically.

If output as hypothesis testing were just a matter of gaining more input, we might expect change after each instance of feedback. Why some input is taken up and not other input will, in part, have to do with comprehensibility, learner-internal factors, etc., but that cannot be the whole story. The fact that learners modify their speech in one-third but not all utterances suggests equally that they are only testing out some things and not others; that their output is indeed a test of a learner-generated hypothesis; that their output is the "selector" for what will be attended to.

Although no-one has yet shown directly that the modified, or reprocessed, utterances are maintained in a learner's interlanguage (though see Nobuyoshi and Ellis, l993), the assumption is that this process of modification contributes to second language acquisition. As suggested by Pica and her colleagues (l989), learners, in modifying their output " ... test hypotheses about the second language, experiment with new structures and forms, and expand and exploit their interlanguage resources in creative ways." (p. 64), in ways, I suspect, that are similar to those we found reflected in the think alouds of the grade eight immersion students just discussed. It might be that the modified, or reprocessed, output can be considered to represent THE LEADING EDGE of a learner's interlanguage.

Output, then, may be used as a way of trying out new language forms and structures as learners stretch their interlanguage to meet communicative needs; they may output just to see what works and what does not. That immediate feedback may not be facilitative or forthcoming does not negate the value of having experimented with their language.

The final hypothesized function of output that I want to mention is its metalinguistic one. As learners reflect on their own target language use, their output serves a metalinguistic function, enabling them to control and internalize linguistic knowledge. When it is argued, as above, that a function of output is to test hypotheses, it is assumed that the output itself IS the hypothesis. That is, the output represents the learner's best guess as to how something should be said or written. We rarely ask learners what their hypotheses actually are, but rather infer them from the output itself. However, under certain task conditions, learners will not only reveal some of their hypotheses, but reflect on them, using language to do so. It is this "level" of output that represents its metalinguistic function.

Thus, we can look not only at "output-as-the-hypothesis-itself" as something learners sometimes do in order to learn, but we can also look at what explicit hypothesizing does for learners. Does this play a role in second language learning?

In order to investigate what learners might make explicit and how this contributes to language development, we need tasks which encourage reflection on language form while still being oriented to getting meaning across. In most of the research tasks used in the study of negotiation, this reflective process is not demanded. The focus is instead on communication where "attention is principally focused on meaning rather than form." (Nunan, 1989: 10). In fact, Ellis (l982) includes in his list of characteristics of communication tasks that "there must be a focus on message rather than on the linguistic code" (cited in Nobuyoshi and Ellis, l993: 204). However, it is certainly feasible for a communicative task to be one in which learners communicate about language, in the context of trying to produce something they want to say in the target language.

We will look at an example in a moment. First though, we need to ask ourselves about the origin of these functions of output, each of which represents cognitive activity –the cognitive activity of identifying knowledge gaps, generating and testing hypotheses, and solving problems. Vygotsky would argue that their source is dialogue, that is, their source can be found in the interaction that occurs between speakers. According to Vygotsky (1986), cognitive processes arise from the interaction that occurs between individuals– from their collaborative dialogue. That is, cognitive development, originates on the interpsychological plane. Through a process of appropriation, what originates in the social sphere comes to be represented intrapsychologically, that is, within the individual. This shift of focus from output to dialogue entails a major shift in our thinking. It involves moving from the study of the *role* of output in second language learning to examining dialogue as one *source* of second language learning.

Let's now consider an example. The two students in Example 1, Keith and George, are in grade eight of an early French immersion program. The task these students, and their classmates, are engaged in is a dictogloss (Wajnryb, l990). The teacher had prepared a short, dense text which dealt with a topic they had been considering in class and which included grammatical features recently reviewed by her. The text, shown below, has been read aloud twice to the students. While it was being read,

students jotted down familiar words and phrases. Following this, students worked in pairs to reconstruct the text from their shared resources. They were expected to reconstruct the text as accurately as possible, both with respect to content and grammar.

A. DICTOGLOSS –L'ENVIRONNEMENT

En ce qui concerne l'environnement, il y a beaucoup de problèmes qui nous tracassent. On essaie de trouver des solutions écologiques mais elles produisent de nouveaux problèmes imprévus. Par exemple, les plastiques biodégradables se décomposent, mais, à la fois, ils produisent des percolats toxiques. L'eau de source n'est quelquefois que de l'eau du robinet. Bien sûr, on a fait beaucoup de progrès pendant les années quatre-vingt mais il nous reste encore beaucoup à faire et à repenser.

They had done similar tasks several times over the last few months so were familiar with the procedures. In the example, George and Keith are reconstructing the first sentence of the dictogloss which is: *En ce qui concerne l'environnement, il y a beaucoup de problemes qui nous tracassent*. [As far as the environment is concerned, there are many problems which worry us.]

Example 1

058: Keith[*]: Attends une minute! Non, j'ai besoin du Bescherelle (verb reference book). S'il vous plaît, ouvrir le Bescherelle à la page qui, OK à la dernière page (i.e. the index). OK, cherche tracasse, un page, deux pages.

059: George: Tra, tra, tracer.

060: Keith: Tracasser page six. Cherche le s'il vous plaît.

061: George: Pas de problème.

062: Keith: C'est sur page

063: George: Verbe, <à la page> six. OK, c'est le même que aimer, (i.e. it is conjugated in the same way and aimer is given as the standard example for all verbs with this pattern of conjugation).

064: Keith: Laissez-moi le voir s'il vous plaît (reading from the page). Le passé simple, nous tracasse; nous aime (Keith is trying to find a first person plural version of the verb which sounds like "tracasse" the word he has written in his notes, but is unable to find one)

065: George: Peut-être c'est ici.

066: Keith: Non, c'est juste nous aime (pause) ah, le présent. Tracasse, aimons, n'est-ce pas que tracasse (to teacher who has just arrived), ce n'est pas nous tracasse (what he has written down in his notes), c'est nous tracassons?

067: Teacher: Ce son des *problèmes* qui nous tracassent (deliberately not directly giving the answer).

068: Keith: *Nous tracassons*.

069: George: *Oh* (beginning to realise what is happening).

070: Keith: Oui? (so what?).

071: George: Les problèmes qui nous tracassent. Like the (pause) c'est les problèmes (pause) like, that concerns us.

072: Keith: Oui, mais tracasse n'est-ce pas *que c'est <o-n-s>*?

073: George: *Tracasse. C'est pas un*, c'est pas un, (pause), oui I dunno (unable to articulate what he has discovered).

074: Keith: OK, ça dit, les problèmes qui nous tracassent. Donc, est-ce que tracasse est un verbe? Qu'on, qu'on doit conjuger?

075: Teacher: Uh huh.

076: Keith: Donc est-ce que c'est tracassons?

077: Teacher: Ce sont les *problèmes* qui nous tracassent.

078: George: Nous, c'est, c'est pas, c'est pas, oui, c'est les problèmes, c'est pas, c'est pas nous.

079: Keith: Ah! E-n-t (in French), OK, OK.

*The following notations have been used in this transcription: ( ) indicates editorial comments added by the authors; <...> indicates text added by the transcriber to aid comprehension; {?} indicates the transcriber's best attempt to understand what was being said; ___ indicates utterances made simultaneously; xxx indicates a word which the transcriber could not understand; "..." indicates that students are reading text.

From Kowal and Swain (1994).

The problem here is that Keith has written "nous tracasse" in his notes and that does not correspond with his knowledge of French that when "nous" is the subject of a verb, the ending of the verb is "ons". This example shows Keith and George jointly coming to an understanding that "les problemes" is the subject of the verb "tracasser", not "nous", and what that implies about the form of the verb, an activity entirely dependent on understanding the meaning of the sentence.

In turns 58-65, Keith and George try to find in their reference book (the Bescherelle) a first person plural version of a verb which doesn't end with "ons" – which, of course, doesn't exist. Keith, in turn 066, is able to put the problem into words in appealing to the teacher: "ce n'est pas nous tracasse, c'est nous tracassons?". *He has verbalized the problem, and now they can work on solving it by engaging in explicit hypothesis–testing*. The teacher (turn 067) deliberately does not provide the correct answer but provides strong hints which she hopes will be sufficient to help the students to work out the correct answer for themselves. At turn 069, George appears to understand how the words are related to one another.

The rest of the example shows George, questioned by Keith and guided by their teacher, struggling with an explanation of his understanding of why "tracasser" should be in the third person plural, not the first person plural. As he says in turn 071: "like the ... c'est les problemes ... like, that concerns us", and in turn 078: "Nous ... c'est ... c'est pas ... oui ... c'est les problemes ... c'est pas ... c'est pas nous". [Us ... it's ... it's not ... yeah ... it's the problems ... it's not ... it's not us.]. This explanation provides Keith with the same understanding that George has had, so that Keith is able to write the verb with the correct "ent" ending. In other words, Keith's construction of knowledge was mediated by objects –the reference grammar, and others– George and the teacher –through dialogue. This is cognitive work constituted in dialogue and leading to new linguistic knowledge.

In this example, Keith initially poses the problem. Then George, with the help of Keith and their teacher, has made explicit the basis of their conclusion. He has provided, though not using metalanguage, an explanation for the form the verb must take which relates to the syntax of the sentence. This results, at minimum, I would argue, in a context sensitive knowledge of a grammatical rule because form, function and meaning are so intimately linked in the way this task was accomplished.

However, we have now moved considerably beyond Pica's definition of negotiation as "the modification and restructuring of interaction that occurs [as a result of] difficulties in message comprehensibilty". KEITH AND GEORGE UNDERSTAND EACH OTHER VERY WELL. What together they have accomplished is a realization of the structure of the sentence as subject, direct object, verb. They were forced to confront their current linguistic knowledge because of a mismatch between their own production (nous tracassons) and previous input (nous tracassent). Meaning, of course, was key to recreating the correct syntax and grammar.

Keith and George accomplished the construction of linguistic knowledge through dialogue; through the joint creation of meaning. The metaphors of input and output – which focus our attention on speaking as the transmission of information– seem limiting in describing the nature of their interaction. What the metaphors do not capture in this exchange is that through speaking, KNOWLEDGE IS BEING CO-CON-STRUCTED. Through their interaction, they established the problem and solved it. Furthermore, through dialogue, they reached a deeper understanding of language in context than what either of them could have done on their own. During this interaction, George and Keith are individually novices but collectively experts: they helped to orient each other and they served as guides for each other through a complex linguistic problem-solving activity.

There is no need to accept that all learning follows the general process of development proposed by Vygotsky from intermental, that is, based in social interaction, to intramental. Some learning is certainly internally driven based on innate principles. But if we accept the appropriation of jointly constructed knowledge as ONE general process of development, two important insights follow.

First, as Donato and Lantolf (l990) point out, those developmental processes that are dialogically derived and constituted, " ... can be observed directly in the linguistic interactions that arise among speakers as they participate in problem-solving tasks." (p. 85). This process becomes particularly observable for language development when the task students are engaged in involves reflecting on their own language production, for example, when they are engaged in talk about language form and meaning. In the present context, this means that what we see occuring as George and Keith struggle with recreating the sentence is part of the process of second language learning. It is not something that leads to learning; it IS learning. In other words, in the collaborative dialogue (not all dialogue is collaborative) between Keith and George, we are given access to learning processes at work. We are able to observe in their dialogic activity, language learning as it emerges in all of its fuzziness.

Introspective data have in recent years supplied us with many useful insights about learners' cognitive processes. However, this line of argument suggests that another source, and a more direct source of cognitive process data, may be in the collaborative dialogues themselves that learners engage in with other learners and with their teachers. If one accepts a Vygotskian perspective that much learning is

an activity that occurs in and through dialogues –that development occurs first on the interpsychological plane through socially constructing knowledge and processes– then it must be that a close examination of dialogue as learners engage in problem-solving activity is directly revealing of mental processes (see Goss, Ying-Hua and Lantolf, l994).

Secondly, as Donato (l994) has argued: "The focus [in SLA] should be ... on observing the construction of co-knowledge and how this co-construction process results in linguistic *change* among and within individuals during joint activity." (p. 39). In the present example, we have observed Keith and George co-construct a small bit of linguistic knowledge such that they are able to correctly produce a verb ending. If this is learning occuring, our expectation for Keith and George should be that if tested later –say a week later– they would be able to provide the correct ending for the verb "tracasser" in the same or similar context.

Two studies have looked quite specifically at the language learning outcomes of collaborative dialogue. One is a study conducted by Donato (l994) about what he referred to as "collective scaffolding". The second is a study conducted by LaPierre (l994) which examined the consequences for learning of peer interaction about the language they were producing.

One of the goals of the Donato study was to reveal how second language learning is brought about on the social plane. Specifically, the study sought to:

> answer the question of whether learners can exert a developmental influence on each other's interlanguage system in observable ways. That is, rather than to theorize that interaction has the potential to result in L2 development, this study attempts to examine how social interactions in the classroom result in the appropriation of linguistic knowledge by the individual. (l994: 39).

The students involved in the study were third semester students of French in an American university. The data analyzed consisted of a one-hour session in which three students planned for an oral activity –the presentation of a skit– that would take place the next week. The students had been told that they could not use notes in their presentation, nor were they to memorize their lines, but they could make notes while preparing if they wished.

Donato examined the transcripts for examples of scaffolding. Scaffolding was defined as a situation where, "in social interaction a knowledgeable participant can create, by means of speech, supportive conditions in which the novice can participate in, and extend current skills and knowledge to higher levels of competence." (p.40) (See also Wood, Bruner and Ross, l976). Example 2 shows the three learners of French mutually constructing a scaffold for each other's performance.

Example 2

A1	Speaker 1	... and then I'll say ... *tu as souvenu notre anniversaire de marriage* ... or should I say *mon anniversaire?*
A2	Speaker 2	*Tu as* ...
A3	Speaker 3	*Tu as* ...
A4	Speaker 1	*Tu as souvenu* ... "you remembered?"

A5	Speaker 3	Yea, but isn't that reflexive? *Tu t'as ...*
A6	Speaker 1	Ah, *tu t'as souvenu.*
A7	Speaker 2	Oh, it's *tu es*
A8	Speaker 1	*Tu es*
A9	Speaker 3	*tu es, tu es, tu ...*
A10	Speaker 1	*t'es, tu t'es*
A11	Speaker 3	*tu t'es*
A12	Speaker 1	*Tu t'es souvenu.*

                                                                (Donato, 1994)

Importantly, no student alone appeared to possess the ability to construct the compound past tense of the reflexive verb "to remember", but together they succeeded. As can be seen, each student holds some relevant information but not all. For example, Speaker 1 knows the correct past participle as shown in line A4, but not the correct auxiliary as indicated in line A6, information though that Speaker 2 provides in line A7. Speaker 3 knows that the verb should be reflexive, but not which auxiliary to use as indicated in A5. In A9 to A12, Speakers 1 and 3 synthesize the scaffolded information and arrive at the correct construction. These students have produced language and reflected on it, showing how they are simultaneously novices as individuals yet experts collectively. Together they have performed beyond their individual competencies.

In all, 32 cases of scaffolded help were identified in the hour-long planning session. The key question, of course, is whether this collective scaffolding leads to linguistic development in the individual learner. That is, could linguistic development be traced back to the collective scaffolding episodes? To determine this, evidence for independent L2 performance was sought in the actual oral activity performed the following week. Of the 32 cases of collective scaffolding observed in the planning session, 75% of them were used correctly the next week. (We see here that scaffolding does not require a stable and identifiable expert as claimed in the earlier literature.)

This is, I believe, impressive evidence of second language learning, showing as it does, that through collaborative dialogue learners can add to their own L2 knowledge and extend that of their peers. This example of collaborative dialogue shows how learners can provide the necessary support for each other to outperform their competence, and in the process develop their interlanguage. Donato points out that it is not a surprising finding "in light of Vygotskyan theory which argues that individual knowledge is socially and dialogically derived, the genesis of which can be observed directly in the interactions among speakers during problem-solving tasks." (p. 51).

It is important to note here that the unit of analysis used in Donato's study was the dialogue, in this case, through dialogue how students provided a collective scaffold. In the LaPierre study to be described, dialogue was also the unit of analysis. She isolated "language related episodes" –episodes in which language was the focus of discussion.

The LaPierre study (1994) involved grade eight early immersion students over a period of about a month. The task was similar to the one we saw George and Keith engaged in, in Example 1. The dictogloss used is shown below. It was hypothesized that when learners talked about the language they were producing, learning would result.

B. Dictogloss–Le Cauchemar

> J'ai fait un rêve effrayant la nuit dernière. Je marchais dans un long passage étroit du metro. Soudain, j'ai entendu des pas derrière moi. Je me suis retourné(e) et j'ai vu un homme aux cheveux couleur de carotte striés de mèches violettes, et en costume d'Adam. Il tenait un énorme oreiller noir. L'expression de ses yeux était diabolique.

Language learning was tested by means of tailor-made, pair-specific post-tests. These pair-specific tests are a pivotal feature of this study. They were developed from the transcripts of the students' talk as they reconstructed the passage in pairs. From these transcripts, "language related episodes" –where students talked about the language they were producing– were isolated. On the basis of these episodes, test items were constructed. Thus, every pair of students had a set of test items that reflected what they specifically had discussed in reconstructing the passage. These tests were administered approximately a week after the students had engaged in the task.

The expectation was that when students jointly reflected on language form and function, and arrived at a correct solution, they would respond correctly to the relevant pair-specific test item. Similarly, when they discussed language form and function but arrived at an incorrect solution, they would respond incorrectly to the relevant pair-specific question. That is, they would have learned, but unfortunately, what they learned in this case was not the correct target form. Thus, each language related episode was classified into categories. One category involved episodes where through their collaborative dialogue they constructed a correct solution. Number 3 below shows an example.

Example 3 –Episode with Correct Solution

Type 1: Negotiation with a Solution

2-021 Kermit: J'ai fait un rêve effrayant la nuit dernière.
I had a frightening dream last night.

2-022 Julia: La nuit dernière.
Last night.

2-023 Kermit: Puis, je sais le début de la seconde phrase.
And, I know the beginning of the second sentence.

2-024 Julia: Attend! Attend! Attend! Il y a quelque chose de mal avec cette phrase. Est-ce que c'est une rêve ou un rêve?
Wait! Wait! Wait! there is something wrong with this sentence. Is dream masculine or feminine (testing both ways to see which sounds better)?

2-025 Kermit: Je pense que c'est un rêve.
I think it's dream (masculine).

2-026 Julia: Le rêve, la rêve, le rêve?
(testing if dream is masculine or feminine, seeing which sounds better)

2-027 Kermit: On va le laisser comme ça.
               We are going to leave it like that.
2-028 Julia: J'ai fait un rêve. OK, sounds good.
               I had a dream (saying it with masculine form). OK, sounds good.

                                                    (LaPierre, 1994)

A second category involved episodes where the collaborative dialogue also led to a solution, however the solution was incorrrect.

What, then, were the consequences of talking about language form and reaching a solution? In general, the results show that when a solution is reached, it corresponds to the students' responses one week later. More specifically, of the 256 episodes where through collaborative dialogue a correct solution was attained, approximately 80% of the relevant post-test items were correct. Similarly, of the 21 episodes where through collaborative dialogue, an incorrect solution was reached, approximately 70% of the answers on the post-test were wrong, although they matched the solutions the pairs had arrived at. These results suggest that collaborative dialogue about language form in the context of a meaning-based task is one source of second language learning by individuals.

As an aside, but, in my view, an extremely important one, the LaPierre and Donato studies reflect measurement of learning outcomes based on what actually happened during interaction, not on outcomes anticipated by the researchers. To take the LaPierre study, one of the tests used was "tailor-made". That is, it was based on what individual pairs of learners said and talked about as they interacted. It was based on what learners ACTUALLY DID, not on what the researcher assumed instructions and task demands would lead learners to focus on. Although the task did encourage students to pay attention to accuracy and form/function links, the students established their own goals and agenda as to what they focused on.

In another classroom-based study that we conducted using a similar task, but where the teacher had spent considerable prior classroom time reviewing verb tenses, an analysis of the content of the language related episodes revealed that only approximately 16% of them had anything to do with verb form or function (Kowal and Swain, l994). This research suggests that no two pairs of individuals working on the very same task interact in the same way and about the same things. As Coughlan and Duff (l994) point out, " ... any event that generates communicative language is unique –[it is] an activity born from a particular constellation of actors, settings, tasks, motivations, and histories." (p. 190). Given this, why would we expect similar learning outcomes amongst our learners from the interactions our research tasks generate?

Thus, it would seem crucial if we are to measure the learning which occurs as a result of task involvement, that we must consider tailor-making our tests to the contents of actual task performance. This content can be seen in the dialogue of the interactions themselves. The preparation of learner-specific tests may seem like a daunting task for the researcher, but it may be essential if we are to capture the language learning that occurs in collaborative dialogues.

Returning to the main argument, we see that the Donato and LaPierre studies suggest at least two different types of collaborative dialogue: one where learners extend each other's language use *per se*; and one where learners talk about language, thus extending each other's knowledge about the target language. In the first, lan-

guage is co-constructed –as is often the case in negotiations as defined by Pica earlier in this paper–; in the second, knowledge ABOUT language is co-constructed. They both represent linguistic development and change.

Of course, collaborative dialogue is not limited to learner-learner interaction; it also occurs between native speakers, and between native speakers and learners. Its defining characteristic is that through joint effort, one or both participants move beyond their current cognitive or linguistic state. During it, learners' performance can outstrip their competence, allowing them to extend their current abilities and knowledge to higher levels of competence. In this sense, language is learned as it is used; it is not learned first and used later.

Let's return now to Vygotsky's theory. Central to Vygotsky's theory is that semiotic systems, notably language, serve as a psychological tool that mediate our relationship with others and with ourselves. As a psychological tool, he argued, it organizes and controls our mental activity. The origin of language as a psychological tool can be traced to dialogue where strategic processes are modelled, co-constructed and appropriated. Considerable research in cognitive psychology has provided supportive evidence for these claims (e.g. Wertsch, 1985a, b; Newman, Griffin and Cole, l989; Díaz, Neal and Amaya-Williams, l990; Wells and Chang-Wells, 1992). In the examples we've been considering, we have seen how the talk between learners has oriented them to the problem and helped them solve it. LANGUAGE HAS BEEN BOTH THE VEHICLE OF COGNITIVE ACTIVITY AND THE PRODUCT OF IT. It is both the means of learning and the product of it.

Stated differently, in dialogue, cognitive activity is created and externalized. In dialogue, we are able to observe some of the origins of language learning and how it unfolds. We are able to observe speech functioning as a learning tool through raising learners' awareness, orienting and focussing learners' attention, constructing knowledge and appropriating it. Let me make this more concrete by describing briefly the Ph.D. research of one of our students, Susanne Holunga, which demonstrates the value of dialogue in enhancing second language learning.

Holunga's research (l994) involved adults who were advanced second language learners of English. The study was set up to investigate the effects of metacognitive strategy training –that is, training about the strategic processes of predicting, planning, monitoring and evaluating– on the oral accuracy of verb forms. What is particularly interesting in the present context, is that one group of her learners were instructed to talk about the strategies as they carried out language-focussed tasks in pairs. This "verbalization group" was compared to another group who received the same instruction about strategies, and who carried out the same tasks in pairs, but who were not instructed to talk about the language learning strategies they were using. Both groups received 15 hours of instruction.

Vygotskian theory would predict that learning would be enhanced among those interacting together in the verbalization group, because the very act of talking together about what they were doing would help them process the experience, that is, co-construct the problem and its solution, and facilitate the appropriation of their co-constructed knowledge. Language would not only be the focus of the learners' attention but the means through which they accomplished the task. Speaking is both process and product.

An example of the collaborative dialogue that was typical of the dyads in the verbalization group is shown as Example 4. In this example, we see "S and G begin

the task by predicting the structures that they probably would be using throughout the task and planning for the task ...". (Holunga, l994: 97). They set goals for themselves, tried out their knowledge, monitored and evaluated themselves and each other.

Example 4

G: Let's speak about this exercise. Did you read it?
S: Yes.
G: Okay. What are we supposed to do?
S: We have to speak about these people and ummm ... justify our position ... you know, our decision ... Our decisions about actions in ummm the past.
G: No I think not just the past. We have to imagine our situation now. We have to give our opinions now.
S: So, for example, I choose Smit because he need it. No ... It's a conditional. I would give Smit ... I would choose Smit because he need the money. Right. I WOULD give ...
G: Needs it.
S: Yes, because he need it.
G: Yes, but no. He needs. "s', you forgot 's". He needs.
S: Did I? Let me listen to the tape. (listens to the tape) Yes. Yes. He needs. I have problem with "s". I paying so much attention to conditionals I can't remember "s". Can you control ... your talking?
G: It's a big problem. I still must remember "had had". But we try.
S: Yes. We try. But I don't know.
G: We don't try ... You know we don't get better, we don't improve. We must practise to change old ways.
S: Okay. Maybe good idea to listen to tape after we each talk.

                                                              (From Holunga, 1994)

The results of this experimental study show that those in the verbalization group made significantly greater gains than those in the other group on a test of grammatical accuracy of verb form. These findings strongly support the claim that speaking helped the learners to learn by shaping and guiding their actions, and by evaluating their own performance. Their dialogue represents "collective cognitive activity which serves as a transitional mechanism from the social to internal planes of psychological functioning." (Donato, l988: 8).

To sum up, in the collaborative dialogues of the Donato and LaPierre learners, we have seen them perform collectively in ways they could not achieve individually. We have seen them together outperform their individual competencies as they co-constructed language, and linguistic knowledge. And we have seen that they learned from this collective activity. These are insights that a focus on input or output alone misses. Furthermore, in the Holunga study, we saw how together, through their interaction, learners took control of the task, themselves and their language, without which they wouldn't have been able to solve the linguistic problems posed by the tasks. As Vygotsky has argued, individual strategies for learning have their source in these interactions.

In this paper, primacy in interaction has been given to speaking as a cognitive activity. Obviously, though, dialogue includes the written mode –witness current discussions on the usefulness for language learning of dialogue journals (e.g. Staton et

al., l995) and computer conferencing (Cummins and Sayers, in press). Even as solitary writers, we have all had dialogues with our intended audiences, struggled with language form, and enjoyed –sometimes– cognitive breakthroughs.

So, what is the place of collaborative dialogue in accounts of second language learning? In a paper entitled "The input hypothesis and its rivals" published in l994, Krashen aims to show that his theory of second language acquisition is superior to rival hypotheses, all of which involve output as an explanatory variable. Krashen claims that "Only comprehensible input is consistently effective in increasing proficiency ..." (p. 48).

I find this way of thinking –of considering the various hypotheses as being IN COMPETITION– to be rather futile. What matters is whether instances of learning can be traced to particular occurrences of output, input or collaborative dialogue. It is also obviously of interest to identify, for example, why learning results from some output, or some input, or some collaborative dialogue, and not others. The research of those working within a UG theoretical framework is key in helping us understand how learning is constrained or advanced; how "certain aspects of mental functioning are constructed on the basis of innately specified principles" (Goss, Ying-Hua and Lantolf, l994: 267). The interaction of innately specified capacities with our linguistic environment in social contexts will provide a more complete understanding of how second language development unfolds. Clearly, though, that learning can be linked to the activities of speaking or writing, or observed in collaborative dialogues, is not a threat to other hypotheses.

Second language learning does not occur in one way, and one way only. Our field is justified in examining the separate roles of input AND output AND collaborative dialogue in second language learning. Furthermore, it may turn out that input, output and collaborative dialogue will be differentially important for learning. Input –both spoken and written– may take learners quite far. Output may play a crucial role in promoting accuracy. And collaborative dialogue may be extremely useful in analyzing and synthesizing knowledge, and in providing the source of cognitive breakthroughs to understanding or restructuring semantic or grammatical knowledge.

Notes

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APPENDIX

Translation of Example 1

058:   Keith: Wait a minute! No, I need a Bescherelle (verb reference book). Please open the Bescherelle at the page with, OK, at the last page (i.e. the index). OK look for *tracasse*, one page, two pages.

059: George   *Tra, tra, tracer*.

060:   Keith: *Tracasser* page six. Look for it please.

061: George: No problem.

062:   Keith: It's on page.

063: George: Verb <on page> six. OK, it's the same as *aimer*, (i.e. it is conjugated in the same way and *aimer* is given as the standard example for all verbs with this pattern of conjugation).

064:   Keith: Let me see it please (reading from the page). The *passé simple*, (Keith is trying to find a first person plural version of the verb which sounds like 'tracasse' the word he has written in his notes, but is, of course, unable to find one).

065: George: Perhaps it's here.

066:   Keith: No, It's just *nous aime* (pause) ah, the present. *Tracasse, aimons*. It isn't *tracasse* (to teacher who has just arrived)? You don't say *nous tracasse* (what he has written down in his notes). Shouldn´t it be *nous tracassons*?

067: Teacher: It's the *problems* that are worrying us (deliberately not directly giving the answer).

068:   Keith: *Nous tracassons*.

069: George: *Oh* (beginning to realize what is happening).

070:   Keith: Yeh? (So what?).

071: George: The problems which are worrying us. Like the (pause). It's the problems (pause) like, that concern us.

072:   Keith: Yes, but *tracasse* shouldn't it be *<o-n-s>*?

073: George: *Tracasse*. It's not a, it's not a (pause), yeh, I dunno (unable to articulate what he has discovered).

074:   Keith: OK, it says problems which worry us. So, is *tracasse* a verb that you have to conjugate?

075: Teacher: Uh huh.

076:   Keith: So is it *tracassons*?

077: Teacher: It's the *problems* which are worrying us.

078: George: Us, it's, it's not, yeh, it's the problems, it's not, it's not us.

079:   Keith: Ah! E-n-wt (3rd. person plural ending) OK, OK.