The Role of Input and Interaction in Second Language Acquisition

LE RÔLE D'INPUT ET D'INTERACTION DANS L'ACQUISITION D'UNE DEUXIÈME LANGUE

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Abstract: By explaining the definition of input and interaction hypothesis, the paper elaborates the theory that both input and interactional modifications facilitate second language acquisition.
Key words: input; interaction; comprehensible input; modification

Résumé: En expliquant la définition de l'input et l'hypothèse de l'interaction, l'article élabore une théorie selon laquelle l'input et des modifications d'interaction peuvent faciliter l'acquisition d'une deuxième langue.
Mots-Clés: input; interaction; input comprehensible; modification

The study of conversational interaction involving second language (L2) learners and their interlocutors has been central to second language acquisition (SLA) research since the early 1980s. Considerable attention has also been directed towards the role of interaction with respect to the conditions considered theoretically important for SLA, such as the learner's comprehension of input, access to feedback, and production of modified output (cf. Gass, 1997; Long, 1996; Pica, 1994; Wesche, 1994, for recent reviews). The role of interaction has long been central to the study of language acquisition theory. The precise role of interaction in actual development and internalization of L2 knowledge has continued to challenge researchers.

1. THE DEFINITION OF INPUT AND INTERACTION HYPOTHESIS

In the interactional approach to L2 input proposed by Long (e.g., 1981), input is defined as "the linguistic forms (morphemes, words, utterances)—the streams of speech in the air—directed at the non-native speaker" (Long, 1983, p.127), whereas the "analysis of interaction means describing the

functions of those forms in (conversational) discourse" (Long, 1983, p.127). Long justified the distinction on the basis that in L2 input one may find modification in the linguistic forms (e.g., deletion of morphemes marking tense), in the interaction (e.g., confirmation checks or self-repetitions), in both, or in neither. His work (1981, 1983) revealed that in NS-NNS interactions, NSs modified their interactions more often and more consistently than they did the input.

The input and interaction hypothesis (Long, 1980, 1983, 1985) combines an argument regarding the importance of input comprehension to SLA (Krashen's input hypothesis: 1980, 1983, 1985) and an argument for the value of modifications to discourse structure for learner comprehension (Long' s interaction hypothesis). Thus, Long deductively argues that modifications to discourse structure (e.g., negotiated interaction and modified input) indirectly facilitate SLA. Krashen's input hypothesis (1985) states that second language (L2) input must both be comprehended and be at one stage above the learner's current level (i+1) in order to be acquired. An added stipulation is that the learner be emotionally receptive to the input, or, in Krashen's terms, the affective filter must be low. Thus, comprehensible input is held to be a necessary, though not sufficient, condition for SLA (Krashen, 1985; Long, 1983).

2. THE INPUT AND INTERACTION HYPOTHESIS

2.1 Comprehension and Acquisition

The basis for the work in L2 interaction involves the ro1e of comprehensible input (Krashen 1982, 1985) in L2 acquisition. Krashen (1985, p.2) argued that L2 learners acquire language by understanding input that contains structures one stage beyond the learner's current level of competence (*i*+1). Comprehension is achieved in part with the help of extralinguistic information in the context. However, many researchers have written about the inadequacies of Krashen's formulation of comprehensible input (Gregg, 1984; McLaughlin, 1987; White, 1987).

The process of turning input into intake has been described by Krashen (1983, pp.138-139) as follows: First, learners understand a message using the not yet acquired *i*+1 L2 structure and somehow connect the form with its meaning. Second, learners must notice a difference between their current interlanguage (IL) competence and the L2 form. If the form then shows up again with enough frequency, it may be acquired. Chaudron (1985) has pointed out that this formulation still lacks a sufficiently detailed psycholinguistic account of the perceptual mechanisms involved in noticing a gap or what constitutes *i*+1. Chaudron also has noted that since the linguistic scope of this hypothesis has been left unclear by Krashen, we may assume that it refers to all levels of L2 forms (i.e., from syntactic to lexical). Furthermore, it has been argued (Schmidt, 1990; Schmidt & Frota, 1986) that one needs to consciously notice, that is, attend to, such gaps in one's IL in order for acquisition to occur. This claim, while appealing, also awaits rigorous testing.

The input hypothesis has also been criticized on other grounds (reviewed in Young, 1988). Two proposed revisions to the input hypothesis relevant to this discussion are the incomprehensible input hypothesis (White, 1987) and the comprehensible output hypothesis (Swain, 1985). Both suggest that negative feedback, during either comprehension or production, is vital to IL development. White (1987) has argued that, besides comprehensible input, incomprehensible input is also vital to SLA. Briefly, White has argued that when learners encounter input that is incomprehensible because their IL rules do not permit a particular L2 structure, they may be pushed to modify those IL rules to accommodate the structure. Thus, comprehension difficulties can provide important negative feedback to the learner (cf. Faerch & Kasper, 1983). Swain (1985) and Pica, Holliday, Lewis, and Morgenthaler (1989) have argued that, in addition to comprehensible input, comprehensible output is also necessary for SLA. This argument hinges on the fact that learner production sometimes elicits either direct or indirect negative feedback from an interlocutor. If communicative demands are put on the learners to make their output more comprehensible, in the process, they may test and modify their IL hypothesis. Swain (1985) has argued for the utility of what she has called "comprehensible output". Her work has expanded and

diversified the role of conversation in SLA, as she has suggested that conversation (and production, in general) pushes learners to impose syntactic structure on their utterances. This is in contrast to comprehension, in which it is not always essential for learners to draw on knowledge of L2 syntax. Thus, with respect to the more complex dimensions of L2 syntax, it is the necessity for learners to strive toward comprehensibility in responding to interlocutor feedback, rather than to reach comprehension of interlocutor input, that may play a pivotal and yet somewhat selective role in the acquisition process.

2.2 A Model of Second Language Acquisition and Use

As Long (1990) pointed out, any theory of SLA must acknowledge the role of comprehensible input in the development of the learner's internal grammar. Given the important role of comprehensible input in SLA, SLA can be conceived of as sets of processes as depicted in **Figure 1**. (from VanPatten, 1992). What **Figure1**. attempts to capture are three (theoretically) distinguishable sets of processes in acquisition. The first set of processes (I) converts input to intake. This is referred to as input processing. From intake the learner must still develop an acquired system, that is, not all intake is automatically fed into the acquired system. The second set of processes (II), then, includes those that promote the accommodation of intake and the restructuring of the developing linguistic system (McLaughlin, 1990; White, 1989). Finally, it is not clear from studies using output data that learner language is a direct reflection of acquired competence. Thus, a third set of process (III) must be posited to account for certain aspects of language production, for example, monitoring, accessing, control, and so on (Schmidt, 1992; Terrell, 1991).
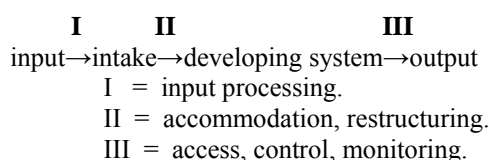
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I   II   III

input→intake→developing system→output

I = input processing.

II = accommodation, restructuring.

III = access, control, monitoring.

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Fig 1. A model of second language acquisition and use (based on VanPatten, 1995)

Input processing involves the first set of processes, the conversion of input to intake. Although input processing can be examined from a variety of perspectives (Chaudron, 1985; Gass, 1988; Terrell, 1991; VanPatten, 1995), we use the notion of *form-meaning connection* in discussing the processes involved in the conversion of input to intake. In other words, the term *input processing* as it is used here involves those strategies and mechanisms that promote form-meaning connections during comprehension. (See VanPatten, 1995, for a more detailed discussion of the relationship between form, meaning, and input processing.) As the learner processes an incoming input string, it must be tagged and coded in particular ways. If the language is to be learned, the internal processor(s) must eventually attend to how the propositional content is encoded linguistically. We believe that intake is that subset of the input that a learner comprehends and from which grammatical information can be made available to the developing system.

2.3 Adjustments and Comprehension

The crux of Long's (1980) argument for the adjustments-to-comprehension relationship is the question of how input is made comprehensible to the learner. One way is to modify the interactional structure of discourse through negotiated interaction between speaker and listener. Much of the research on negotiated interaction(Doughty＆Pica, 1986; Gass＆Varonis, 1985; Long＆Sato, 1983; Loschky, 1988; Pica＆Doughty, 1985; Pica et al., 1987; for review, Pica, 1992) has concentrated on a subset of strategies and tactics (Long, 1983) used in conversation to overcome comprehension difficulties.

Another way to increase learner comprehension is for the speaker / writer to modify the input (e.g., lexis, morphology, syntax) directed at the listener／reader. Input modifications are frequently the linguistic byproduct of negotiated interactions (Pica et al., 1987) and may be classified as either input

simplifications or elaborations (Parker＆Chaudron, 1987; Ross et al., 1991). Thus, if a listener asks for clarification of a previous utterance, the speaker will frequently respond by elaborating on the utterance (e.g., by repeating, rephrasing, or explaining it), or by simplifying it (e.g., by using less complex grammatical structures or higher frequency lexical items). (See Long, 1980, 1983; Parker＆Chaudron, 1987; Ross et al., 1991, for reviews).

Evidence for the facilitation of comprehension by input modification was reviewed by Parker and Chaudron (1987). The authors analyzed 12 studies comparing NNS comprehension (for both listening and reading) of unmodified and premodified input (i.e., scripted input modified by the researchers). Overall, premodified input increased NNS comprehension. Furthermore, the authors concluded that input elaborations facilitate comprehension at least as much, if not more than, input simplifications, which, they argued, may be unnecessary for optimum comprehension A similar argument has been made by Pica et al. (1987), who used premodified input in their noninteraction group. When the authors compared their premodified input with the input modifications produced during negotiated interactions, they argued that "a decrease in the complexity of the input did not appear to be a critical factor in comprehension. Indeed,… interaction resulted in input that was more complex than input that was modified according to conventional criteria of linguistic simplification" (pp. 749-750), yet this input led to greater comprehension.

Long's (1980) proposal went as follows: First, we need to show that comprehension promotes acquisition, and second, we need to show that conversational modifications lead to better comprehension. From this, we would be able to deduce that conversational modifications promote acquisition. Despite the promising results of this early research, however, the effect of interaction on acquisition has remained a complex issue. As Long himself pointed out (1985), comprehensible input, in itself, was necessary but not sufficient to promote the acquisition process. Interactional modifications, therefore, cannot be the only mechanism behind the learner's L2 development. It was becoming increasingly apparent that researchers would need to look for additional interactional processes that could assist the learners' access to L2 forms not readily apparent in the comprehensible input generated by conversational interaction.

The importance of feedback, particularly as a source of negative evidence, as a way of elucidating the inadequacy of learners' own rule systems, has also been pointed out by White (1987), who suggested that what is necessary for L2 development is not comprehensible input, but incomprehensible input. By this she means that modifications to language (triggered by something incomprehensible) become the impetus for learners to recognize the inadequacy of their own rule system. As Gass (1997) argues, it is incomprehensible input that may trigger learners' recognition of mismatches between their IL grammar and that of their L2 target. In essence, this is the crux of the current argument as to the possible role that interaction plays in the learning process. As illustrated in a series of articles by Gass and Varonis (see, e.g., Varonis＆Gass, 1985), comprehension difficulties or "instances of non-understanding" are what allows a learner to realize that linguistic modification is necessary. In essence, then, interactional modifications or "negotiations" (as they have long been referred to by Gass and Varonis and, increasingly, by researchers throughout the field of SLA), can serve to focus learners' attention on potentially troublesome parts of their discourse, providing them with information that can then open the door to IL modification. These modifications may, in turn, lead to subsequent stabilization or language change. Through clarification and elaboration of the message, non-native speakers (NNSs) can receive more usable input in their quest to understand the L2 and, further, this new or elaborated input can draw attention to IL features that diverge from the L2. It is the realization of divergence between L2 forms and target language (TL) forms that becomes the catalyst for learning. Therefore, negotiation, along with certain classroom activities such as teacher explanation, can bring particular forms to a learner's attention—forms that might otherwise be unnoticed—thus enhancing the input (Sharwood Smith, 1985) and making it more salient.

The continuing influence of the notion of comprehensible input can be seen in the focus on the negotiation of meaning and on interactional modifications in the L2 interaction paradigm. Many researchers (e.g., Long, 1983; Pica et al., 1987; Varonis＆Gass, 1985) have stated that interaction containing negotiation of meaning serves to make input comprehensible for the learner. Thus, the claims for the importance of negotiation of meaning and interaction assume that comprehension of input

facilitates L2 acquisition (cf. Young, 1989). To better understand the role of input and interaction in L2 acquisition, it is still necessary to determine exactly how L2 input is comprehensible (semantically, syntactically, or both, Gass, 1988) and to specify how interaction could facilitate L2 acquisition or more specifically, L2 acquisition of syntactic structure. The studies of L2 interaction have mainly focused on the modifications that interlocutors make to facilitate the comprehension and participation of the NNSs, although each study focused on different elements of interaction.

In addition, comprehension studies by Chaudron (1983), Chiang & Dunkel (1992), and Flowerdew & Miller (1992), have found that different types of redundancy and elaboration help L2 learners in listening comprehension. Furthermore, interactional modifications exhibit decreased rates of speech (Long, 1983), which have been shown to improve comprehension for L2 learners (Blau, 1990; Conrad, 1989; Griffiths, 1990; Kelch, 1985), especially longer pauses at constituent boundaries (Blau, 1990). Therefore, syntactically complex input can be made comprehensible with the use of repetition, expansions, and decreased rate (see also Pica, 1992). This suggests that interactional modifications are helpful to L2 learners because they allow for monitoring comprehensibility, whereas the grammatical modifications offer a mix of both complex and simple input. Thus, the linguistic form not only is available to the learner in the input, but also is accessible to the learner for selective attention to the form (cf. Pica, 1992).

2.4 Processing Instruction

The type of instruction used in the present study is called *processing instruction* because its aim is to alter the way in which learners process input. In other words, its purpose is to direct learners' attention to relevant features of grammar in the input and to encourage correct form-meaning mappings that result in better intake. The input used in processing instruction is called *structured input*. The term input is used because, as will soon become clear, learners are not engaged in producing language but are actively engaged in processing input. The term *structured* is used because the input is not free-flowing and spontaneous, like the input one might receive in a communicative interaction. Instead, the input is purposefully prepared and manipulated to highlight particular grammatical features and to push the learners not to rely on their existing processing strategies.

In the preliminary experiments in focusing learners' attention on grammatical features in input we needed to develop some guidelines (Van Patten, 1993):

Teach only one thing at a time. Break up paradigms and rules into smaller bits and pieces.

Keep meaning in focus. Learners should have to attend to each utterance for a message that it contains and Learners should not be able to successfully complete the activity unless they have understood the content of each utterance.

Learners must "do something" with the input. Learners must check boxes, complete a survey, indicate true-false, provide one-word responses, provide an answer from a list of alternatives, offer the name of someone else who fits the description, and so on. In other words, learners must be actively involved in processing the input and must show this active involvement by responding to the input in some way.

Use both oral and written input. Because of individual differences in acquisition, some learners benefit more from aural input while others benefit more from written input. A judicious combination of oral and written structured input provides for the widest net possible in directing learners' attention.

Move sentences to connected discourse. Early activities in a sequence should focus on isolated sentences. Connected discourse should appear later in the sequence. By starting with sentences, learners have a better opportunity to perceive and process the grammatical item that is in focus. Connected discourse from the instructor or from a lab tape may (a) not allow sufficient processing time for the grammatical item to be attended to, or (b) may result in "noise" that interferes with focal attention and may "drown out" the grammatical item in focus (see VanPatten, 1990, for experimental work). Connected discourse should not be avoided if the purpose is to develop listening skills, but in terms of grammar acquisition, it should be come later in a lesson rather than at the beginning.

Keep the psycholinguistic processing mechanisms in mind. This guideline serves to ensure that learners' focal attention during processing is directed toward the relevant grammatical items and not elsewhere in the sentence.

3. CONCLUSION

Although interaction may provide a structure that allows input to become salient and hence noticed, interaction should not be seen as a cause of acquisition; it can only set the scene for potential learning. As Long (1996) has pointed out, there are many factors involved in L2 learning; the role of interaction is claimed only to be facilitative. The sources of learning are complex and can be seen as stemming from learner-internal factors, some of which have received extensive treatment in the SLA literature (see Gass, 1997. for a review). However, current research on the role of interaction in L2 development continues to contribute to our understanding of the relationship between input, interaction, and SLA. It seems that interaction can have positive effects on L2 development and that the complex matter of individual differences needs to be considered carefully. The many questions surrounding the study of interaction, development, and L2 learners suggest that this area will continue to provide challenges as well as insights into our understanding of the processes involved in SLA.

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