The interaction hypothesis:
A literature review

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Abstract

This paper will examine the interaction hypothesis (IH) in second language acquisition (SLA). To begin with a short discussion of the confusing terms in SLA such as theory, model, hypothesis, and construct will be done so as to help readers easily understand theories in the field of SLA and related concepts. Next, what the IH is, and who proposed it will be discussed in detail. How the IH has evolved and has been modified since its inception will then be pointed out. The origins of the IH will also be discussed. In addition, the role of the IH in the field of SLA will be presented together with its positive contributions as well as its caveats. Research studies that support the hypothesis and those that do not support it will both be listed. Moreover, all the constructs in the IH will be delineated. The implications that the hypothesis has for SLA pedagogical research will also be mentioned. Overall, the hypothesis can probably be considered as one of the most persuasive in current SLA literature.

To understand the literature in the field of SLA, a good understanding of certain commonly used terms in the field is needed and such terms as theory, model, hypothesis, and construct may appear confusing to some people. Therefore, a brief overview of these terms will be addressed. To begin with a theory, as VanPatten and Williams (2007) pointed out, at its most fundamental level, is a set of statements about natural phenomena which explains why these phenomena happen the way they do. In other words, they posited that the major function of a theory is to explicate observed phenomena. Unlike a theory, a model, as indicated by VanPatten and Williams, depicted processes or sets of processes of a phenomenon and whereas a model may illustrate how different components of a phenomenon interact, it does not have to explain why. A hypothesis, according to VanPatten and Williams, is usually an idea about a single phenomenon and a theory in science can produce hypotheses that can be tested by experiment and observation. These authors defined a construct as a key feature or mechanism that the theory depends on and it must be definable in a theory.

Brown (2007) remarked that the interpersonal context where a learner operates takes on great significance, so the interaction between learners and others is the focus of observation and explanation. The interaction hypothesis (IH) is an excellent example. The IH, which has also been referred to as the input, interaction, and output model by Block (2003), the interaction theory by Carroll (1999), the oral interaction hypothesis by Ellis (1991), and the interaction approach by Gass and Mackey (2007), was first proposed by Long (1981). In its initial formulation, Long stated that participation in conversation with native speakers, which is made possible through the modification of interaction, is the necessary and sufficient condition for second language acquisition. Long (1981) also gave a clear definition of the two constructs input

and interaction: "*Input* refers to the linguistic forms used; by *interaction* is meant the functions served by those forms, such as expansion, repetition, and clarification" (p. 259). Ellis (1991) indicated that the IH advances two main claims about the role of interaction in second language acquisition.

1. Comprehensible input is necessary for second language acquisition.
2. Modifications to the interactional structure of conversations taking place in the process of negotiating a communication problem help to make input comprehensible to a second language learner.

In another article, Long (1983, cited from Ellis, 1991) suggested.

1. Access to comprehensible input is characteristics of successful acquisition in first and second language.
2. More quantities of comprehensible input are likely to lead to faster acquisition.
3. Lack of access to comprehensible input will result in little or no acquisition.

As Ellis (1991) observed, Long (1983) embraced the views about the role of comprehensible input proposed by Krashen (1982). Researchers who saw comprehensible input as a major causative factor in second language acquisition, as Ellis (1994) noticed, are Krashen (1981, 1985, 1989) and Long (1981, 1983, 1989). Although comprehensible input plays an important role in Krashen's input hypothesis and Long's interaction hypothesis, there is a difference in the ways these two researchers saw comprehensible input. As Ellis (1994) rightly commented, Krashen claimed that input becomes comprehensible thanks to simplification and with the help of contextual and extralinguistic clues, whereas Long argued that interactive input is more important than non-interactive input.

The evolution of the IH has been contributed by Pica (1987). As Ellis (1991) indicated, the IH is not only most clearly associated with the work of Long (1980) but it is also closely associated with the work of Pica (1987). In other words, Long proposed the hypothesis, whereas Pica empirically investigated it. Ellis (1991) noted that by carefully testing the claims of the hypothesis, Pica has extended the IH in a main way by emphasizing the importance of the social relationship between participants as a determinant of interactional modifications. Therefore, in Ellis's (1991) point of view, the IH can be summarized as follows.

1. Comprehensible input is necessary for second language acquisition.
2. Modifications to the interactional structure of conversations taking place in the process of negotiating a communication problem help to make input comprehensible to a second language learner.
3. -Tasks where there is a need for the participants to exchange information with each other promote interactional structuring.
   -A situation where the conversational partners share a symmetrical role relationship affords more opportunities for interactional restructuring.

There seems to be a clear shift in Long's (1989) position about the role of comprehensible input in second language acquisition (SLA). Long (1981) clearly stated that input is both necessary and sufficient for SLA; however, in his paper in 1989 he admitted that although comprehensible input is necessary for SLA, it may not be sufficient. Nonetheless, as Ellis (1991) pinpointed, Long does not mention when or in what ways comprehensible input is insufficient for acquisition although acknowledging that input may not be sufficient for acquisition. Having reviewed and critically evaluated the IH, Ellis (1991) went even further by proposing "a revised version of the interactional hypothesis" (p.36). His revised version is as follows.

1. Comprehensible input facilitates SLA but is neither necessary nor sufficient.

2. Modifications to input, especially those taking place in the process of negotiating a communication problem make acquisition possible providing that the learners: (1) comprehend the input, and (2) notice new features in it and compare what is noticed in their output.

3. Interaction requiring learners to modify their initial output facilitates the process of integration.

As Ellis (1991) contended, the claims in his revised version are weaker than those of the original IH and one particular example is comprehensible input which is deemed as neither necessary nor sufficient for acquisition. He also emphasized that the advantage of his revised version is that it is possible to see how the hypothesis can be empirically tested.

As an important hypothesis, the IH is under continuous review, evaluation and reformation. Indeed, Long (1996) suggested an updated version of the IH. He wrote:

> …it is proposed that environmental contributions to acquisition are mediated by selective attention and the learners' developing L2 processing capacity, and that these resources are brought together most usefully, although not exclusively, during *negotiation for meaning*, Negative feedback obtained during negotiation work or elsewhere may be facilitative of L2 development, at least for vocabulary, morphology, and language-specific syntax, and essential for learning certain specifiable L1-L2 contrasts (p. 414).

Long (1996) also indicated that negotiation for meaning, especially negotiation work that triggers interactional adjustment by the native speakers or more competent interlocutors, facilitates acquisition as it connects input, internal learner capacities, particularly selective attention, and output in productive ways. Additionally, he clearly pointed out that the IH is certainly not intended as anything like a complete theory of language learning because many

aspects of the proposal have barely been investigated in adult second language acquisition and those aspects may pose potential problems. Interpreting what Long (1996) wrote, Gass and Mackey (2007) stated that through interaction learners' selective attention is directed to problematic features of knowledge of production. They further explained that learners may first recognize what they say differs from what a native speaker does and learners may notice that they cannot express what they wish to express. In addition, interaction, as Gass and Mackey put it, may lead learners to pay attention to something new such as a new word or grammar structure, so the development of the second language is promoted.

In terms of the origins of the IH advanced by Long (1981, 1983, 1996), Ellis (2008) posited that the origins of the IH lie partially in Hatch's (1978) work on discourse analysis and second language acquisition and partially in Krashen's input hypothesis. However, Gass and Mackey (2007) noted that the current form of the IH includes some features of the input hypothesis proposed by Krashen as well as those of the output hypothesis advanced by Swain (1985, 1995, 2005). Besides, as Ellis (2008) rightly observed, Long (1983) stressed the role played by interaction in making input comprehensible, but Long (1996), in his updated version of the IH, was more faithful to the work of Hatch (1978) in that he admitted that interaction can facilitate acquisition by assisting learners' second language production. The later version of the IH has been very closely related to another construct, Focus-on-Form, which is a type of instruction where attention to form arises out of meaning-centered activity derived from the performance of a communicative task (Ellis, 2008). Commenting on the updated version of the IH, Ellis (2008) wrote.

…with its emphasis on the contribution of negative feedback and modified output as well as comprehensible input and its recognition that interaction works by connecting input,

internal learner capacities, and output via selective attention is obviously a major advance on the early version (p. 257).

Nevertheless, Ellis (2008) also pointed out that there are still some caveats with the updated version of the IH. First, a theory of language acquisition based on one type of interaction (negotiation sequence) or a single interactional strategy such as recasts would seem relatively limited as it constitutes only a small portion of the total interaction a learner experiences. Second, negotiation may work best with intermediate learners, whereas it may not be very effective for a beginner or an advanced learner as the former does not have enough linguistic resources to negotiate effectively and the latter tends to attend to opinion and interpretation rather than comprehension and linguistic clarity. Other factors to be considered include learners' ability or their preparedness to negotiate and differences in interactants' negotiation styles. Despite the caveats, as Ellis (2008) concluded, the interaction hypothesis has generated considerable interest in the field of SLA, has spawned a large number of research studies, and has demonstrated enough explanatory power. No theory of SLA, as Ellis asserted, can be complete without an account of the role played by interaction and the interaction hypothesis is still one of the most convincing statements of this role to date.

Research has been conducted to test the IH and there are a number of research studies that lend support to the IH such as Pica, Young, and Doughty (1987), Gass and Varonis (1994), Loschky (1994), and Ellis, Tanaka, and Yamazaki (1994). However, there are other studies that fail to support the IH (Derwing, 1996; Erlich, Avery, & Yorio, 1989; Sato, 1986).

In terms of constructs, the IH seems to have four major ones which are (comprehensible) input, interaction, feedback, and output. Gass and Mackey (2007) posited that input which is the

language learners are exposed to is the "sine qua non of acquisition" (p. 177). They further noted that the language addressed to learners has been called foreigner talk or modified input which makes the language more comprehensible to the learners. They also pointed out that interaction refers to the conversations learners participate in, and it is important because it is in this context that learners receive information about the correctness as well as the incorrectness of their utterances. As Gass and Mackey stated, feedback constitutes two broad types: explicit feedback which includes corrections and metalinguistic explanation and implicit feedback which includes negotiation strategies such as confirmation checks, requests for clarification, comprehension checks, and recasts (a rephrasing of an incorrect utterance by using a corrected version of the utterance while maintaining the original meaning). Feedback is useful as it may make problematic aspects of learners' interlanguage salient and may give them more opportunities to focus on their production or comprehension, thus promoting second language acquisition (Gass & Mackey, 2007). Output seems to be the language the learners produce. As Gass and Mackey indicated, after producing a problematic utterance and receiving feedback about its lack of comprehensibility, learners can realize that what they have just said is not understood, so they have to force themselves to reformulate the initial utterance so as to make themselves understood by producing more target-like output. It was also pointed out that output can be used to test hypotheses about the target language and output can promote automaticity or the routinization of language use. To illustrate their point, Gass and Mackey take the example of driving in which the first time may require the driver to concentrate and make some effort, but automaticity of the route from home to work happens following multiple trips along that route. Similarly, as the authors supposed, continued use of language enables learners to become more fluent and produce the language automatically. Two other related constructs in the IH are attention and language-

related episodes which refer to instances where learners may question the meaning of a linguistic item, question the correctness of the spelling or pronunciation of a word, question the correctness of a grammatical form, or implicitly or explicitly correct their own or another's usage of a word, form or structure (Lesser, 2004, cited in Gass & Mackey, 2007).

As Gass and Mackey reasoned, the current IH can be seen as becoming both a model and a theory in some senses. They postulated that the IH is moving toward becoming a model in the sense that it describes the processes related when learners encounter input, are involved in interaction, receive feedback, and produce output. Nonetheless, they further assumed that the IH is also moving toward the status of a theory in the sense that it also attempts to explicate why interaction and learning can be linked using cognitive concepts from psychology such as noticing, working memory, and attention.

There are two common misunderstandings concerning the scope of the IH, as Gass and Mackey (2007) noticed. First, IH has occasionally been criticized for not addressing all elements of the learning process; however, like all approaches and theories in SLA, the IH takes as it primary focus particular aspects of the language learning process. For the time being, as Gass and Mackey stated, the IH is primarily focused on the role of input, interaction, and output in learning. Second, it is also wrongly believed that the IH can be directly applicable to classroom methodology because the IH is focused primarily on how languages are learned. Therefore, as Gass and Mackey claimed, it is likely to be premature to see direct application to the classroom.

Undoubtedly, the IH has received considerable attention in SLA and it has had enormous influence on the field. Brown (2007) posited that the IH has pushed pedagogical research on SLA into a new frontier as it centers educators on the language classroom not just as a place in

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which learners of varying abilities, styles, and backgrounds mingle, but as a place in which contexts for interaction are carefully designed. It also focuses material and curriculum developers on creating the optimal environments and tasks for input and interaction such that the learners will be stimulated to produce their own learner language in a socially constructed process, as Brown further commented.

Overall, the IH may seem very persuasive and easily accepted as language is inextricably related to and used in interaction as its major function is likely to be used for human interaction. Therefore, the idea that the processes involved during interaction can facilitate language acquisition seems to be intuitively reasonable. However, the initial version of the hypothesis was actually very strong, so it was criticized for considering that comprehensible input alone can be necessary and sufficient for SLA. In fact, SLA is a complex and elusive process, so it is not easy to see the direct cause of mastery of a second language. Therefore, overemphazing the role of comprehensible input can be problematic. After a decade and a half since the inception of the IH, it was updated. The updated version is indeed broader in scope and is seemingly more tenable in comparison with the earlier versions. However, like any other theory or hypothesis, the IH is certainly not complete and is unable to account for all aspects in the process of SLA and Long (1996) did mention this point. In the updated version, negotiation of meaning can obviously facilitate acquisition of a second language. However, the role of negative feedback in facilitating SLA may seem more ideal than realistic in real life communication and interaction. The rationale behind the usefulness of negative feedback for SLA is convincing and seems to be well grounded, but negative feedback is not often found in daily communication and interaction for some reasons. Therefore, the reasons for not receiving negative feedback may need to be empirically investigated by directly observing and using stimulated recall to elicit interactants'

reasons for not giving negative feedback. Also, more empirical studies are needed to fully document the real life conversations between learners and native speakers in various contexts to see if negative feedback is representative enough to facilitate SLA and if it does facilitate, how much it can contribute. If it fails to emerge prominently, the facilitative role of negative feedback needs to be seriously reevaluated. In addition, the role of negative feedback in the classroom can also seem very controversial because in order for negative feedback to be easily noticed, it has to be easy for the learners to recognize. As a result, the focal issue to be discussed may be what kind of negative feedback may work best for the learners without embarrassing, intimidating or demotivating them. If recasts are believed to be negative feedback, another question that needs to be extensively investigated is if they are useful and easy for the learners to notice enough to readjust or modify their utterances as recasts may be too subtle for learners who are highly concentrating on getting their meaning across to notice the problematic aspects of their utterances. Additionally, what may seem problematic for one may not be for another because some learners will deliberately ignore any mistakes they make if the message is fully received even when such mistakes are pointed out. Furthermore, individual differences can significantly influence the effectiveness of negative feedback as each learner with a different age group, cognitive ability, and learning preference, style, and strategies may find various forms of negative feedback more suitable and personally preferable. Whereas there is research that was able to support the hypothesis and there is some research that was unable to support it, there is a need for more rigorous and well-designed research studies to shed more light on the claims made by the IH so that the IH, hopefully, can have more direct application in the second language classroom.

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