

The Relation of Input, Interaction, and Output in SLA

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ABSTRACT

Since the 1980s, Second Language Acquisition (SLA) has become a focal point of researchers in various fields, including behaviorists, psychologists, linguists, and sociolinguists. In SLA, Input Hypothesis, Interaction Hypothesis, and Output Hypothesis are three important theories that focus on the influence of external environments to learn languages. Input Hypothesis holds that learners' current level of language is "i." Based on that, providing a large amount of "i+ 1" language input can improve their language acquisition level. Although the Input Hypothesis does not solve the problem of how to measure the comprehensibility of inputs, the Interaction Hypothesis provides a complement to it. The interaction strategies can promote the understandings of language input. The process of interaction is accompanied by language output. Language output is not only the aim of language acquisition but also the way to test the level of language acquisition. Swain argues that there are three functions of output, they are the noticing function, the hypothesis testing function, and the meta-linguistic reflective function. Output is also a function of improving comprehensible input in language acquisition. Although language acquisition may be influenced by the frequency and quality of the learner's output, it should not be ignored that outputs play a key role in consolidating learners' mastery of inputs. In the process of output, learners get feedback and improve the comprehensibility of input through interaction. Therefore, interaction is an effective strategy in both input and output. The conclusion of this paper is based on a comprehensive perspective by analyzing the internal relations and mutual influence of the Input Hypothesis, Interaction Hypothesis, and Output Hypothesis.

Keywords: *Input Hypothesis, Interaction Hypothesis, Output Hypothesis, SLA*

1. INTRODUCTION

According to the theory of modern foreign language teaching, the process of language learning is "input - intake - output". Input and output are essential because the input is a prerequisite for output and output is a necessary result of input. Intake is needed in the process of transforming input into output, in which interaction is an effective approach to receiving input and making output [1]. Input Hypothesis proposed by Krashen, Interaction Hypothesis proposed by Long, and Output Hypothesis proposed by Swain has a profound influence in explaining the process in SLA. These three hypotheses reflect the diverse viewpoints of researchers about what role does the linguistic environment plays in the SLA. Input Hypothesis explains how the learner learns language step by step through comprehensible input. Comprehensible input is an important condition of language acquisition for a learner, and "i+ 1" language input mode is an important criterion for a learner to improve his acquisition level. Interactive Hypothesis

explains that interactive strategies such as language input adjustment, structural adjustment, and request for clarification can help learners to understand and assimilate language input. The Output Hypothesis explains that language output helps learners to understand and consolidate their acquired knowledge and to obtain timely feedback.

Although input, interaction, and output have a significant influence on second language acquisition, none of them can independently interpret the whole system of SLA. In addition, these three factors can not directly determine the language proficiency of learners. For better studying the whole process of second language acquisition, it is very important and necessary to link the three factors. By reviewing literature and research in the three research fields, this paper attempts to examine the interrelationships between inputs and interactions, between outputs and inputs, and between interactions and outputs. Through studying the influence and relationship among these three factors, SLA can be regarded as a dynamic system composed of input, interaction, and

output. Therefore, this paper provides a comprehensive view of the three language environments because of their interconnection.

2. LITERATURE REVIEW

2.1. History of SLA

The research on SLA has a history of 50 years since the 1950s, with different perspectives from different disciplines enriching the theories in this field. *The Significance of learner's errors* published by Corder and *Interlanguage* published by Selinker both defined the research object of SLA, pointing out the direction of SLA research and laying a theoretical foundation for subsequent SLA research. SLA is multidisciplinary, in which linguistics, behaviorism, and sociocultural studies are three major research fields [2]. The Monitor Model was regarded as the theoretical model of a comprehensive system in the 1980s, although it was also controversial from different aspects. Undefined terminology, unmotivated constructs, a lack of empirical content and explanatory power, and its falsifiability are all at the center of the debate [3]. Therefore, the Input Hypothesis will be supplemented by other subsequent theories due to certain deficiencies.

In Input Hypothesis, this paper describes its background, content, and drawback; In Interaction Hypothesis, this paper describes the refinement of Input Hypothesis, and in Output Hypothesis, this paper attends to the relationship between output and input and interaction.

2.2. Input Hypothesis

2.2.1. Background

As a pioneer in the research field of SLA, Stephen Krashen has made significant contributions to explaining the process of language acquisition, and his theories are known as the source of ideas for the study of SLA because of the diversity and creativity [4]. The Monitor Model, proposed by Krashen, is the most influential and controversial theory of SLA in the world. The Monitor Model consists of five hypotheses, among which the Input Hypothesis is the core. Krashen emphasizes the status of comprehensible input in the process of input, pointing out that comprehensible input is an essential factor of SLA, and all other factors are considered to encourage or lead to language acquisition only if they assist to comprehensible input [5]. Krashen's claim to Input Hypothesis makes it the focus of attention in SLA. On the one hand, the concept of comprehensible input has been recognized and supported by many second language learners, and its theoretical approach has also been used in classroom teaching.

2.2.2. Comprehensible Input

Krashen proposed the Monitor Model, and Input Hypothesis is one of the five hypotheses. Comprehensible input, the key conceptions of the Input Hypothesis, is emphasized by Krashen as guiding language acquisition. It begins by attempting to explain how we learn languages. Krashen contends that there is only one way for humans to acquire language, that is, by understanding information or receiving "comprehensible input" [5]. The acquisition of language consists in trying to understand what others say. Language acquisition happens when learners hear an informational discourse and try to understand its meaning. However, language acquisition does not occur if learners focus only on language form rather than content and meaning. Hence, to acquire the language, they should pay more attention to the meaning than the form. Secondly, it tries to explain how learners move forward in acquisition. Krashen explains the process of language acquisition as follows: we move forward in the natural order, by understanding the input that contains the structure of the next stage, that is, a little bit above our current level of language ability. Assume the current level is "i" and the next stage is "i+1" (stage a little higher than the current level). Context includes extra-linguistic information, knowledge of the world, and previously acquired linguistic abilities, which help learners understand languages that contain unlearned grammar. Krashen's interpretation of "i" and "i+1" defines the scope of the learning material provided to the subjects in this experiment. There is a controversy about the application of the "i+1" mode in actual language teaching. Since teachers cannot grasp the degree to which language input conforms to the definition of "i+1", therefore, the learner may be provided with "i+1" or "i+3" that beyond "i+1". The reasons for this situation are that learners have different levels in the same class, and teachers do not know the level of each learner. More professional and detailed standards are needed for the assessment and grading of learners' language competence.

Krashen's Input Hypothesis contains four elements. The first element is Input quantity, which means abundant and sufficient language inputs should be provided for learners to learn the language. The second element is Input quality, which means the language input that contains a "+1" structure should be comprehensible for learners. It should also ensure that the grade of the inputs is somewhat greater than the learner's current language level. The third element is Input mode, which means learners naturally receive input in the language environment, and the language material is generally adjusted in terms of meaning. Lastly, Input conditions should be considered. Learners can better receive input only when their emotional anxiety is low and the emotional barrier is weak.

These four elements are the four criteria for comprehensible input. The language input provided to learners should be as close as possible to the requirements of the four standards since more research is needed to explore the methods of achieving them. Comprehensible input and Input Hypotheses have profoundly influenced the language teaching system, language teaching methodology has been changed, the role of learners has been emphasized in the acquisition process, and the teacher-centered approach in language teaching has been shifted [6]. In Krashen's Input Hypothesis, he emphasizes input but neglects output; he values receiving skills -- listening and reading but excludes output skills. Due to his limitations, the Input Hypothesis cannot fully explain the whole process of SLA.

2.3. Interaction Hypothesis

In the SLA framework, the Input Hypothesis needs to be supplemented by other theories that explain precisely how to make the input comprehensible, which Krashen fails to do. As an extension of the Input Hypothesis, Michael Long proposes Interaction Hypothesis [7]. In his opinion, it is not enough to fully understand and recognize the nature of language input only based on language input, and it is necessary to pay close attention to the interaction between native speakers and learners. The interactive process provides input and feedback for learners. In the interaction between the two parties, there are two adjustments for language input. One is adjusting the language form, which makes the language input closer to the learners' level. The other is adjusting the structure and function of discourse, which improves the comprehension of input with the assistance of asking questions, repeating speeches, explaining meanings, and so on. For learners, language acquisition that provides only comprehensible input is mono-directional so that there is little opportunity to communicate and receive feedback, while bidirectional interaction can provide opportunities for learners and teachers to communicate and interact.

In the 1980s, many researchers focused on the adjustment of language input, and they generally believed that modifying language form is a helpful approach for learners to understand a second language. Long found that the modification of language form is not sufficient for providing comprehensible input for second language learners. The native speaker made a lot of modifications to the interactional structure of the conversation. This type of modification has a significant function in providing comprehensible input. Therefore, Long make a distinction between modified input and modified interaction. The modified input refers to the modification of linguistic input, and the modified interaction refers to the modification of the interactional structure of the conversation. To test Interaction Hypothesis, Long designed a group of experiments on the

modification of language form and the modification of the interactional structure of conversation in oral communication between native speaker-native speaker and native speaker-non-native speaker [8]. The experimental results show no matter whether speakers are native or not, there is no difference between their modifications of language form. While there are some difficulties in conversation, the group consists of native--non-native tends to use more strategies including repetition, confirmation check, comprehension check, and clarification check to improve comprehensible input. According to the result, Long acclaimed that the modified interaction is more conducive to improving the comprehension of language input.

Interaction Hypothesis links the linguistic environment of language input to the development of language acquisition of learners. To study the relationship between them, Long put forward three theoretical argumentations which is an indirect proof method that is easier to implement than the direct proof method: 1) Is the negotiated interaction facilitating the understanding of L2 versus non-interaction and premodified inputs? 2) Is premodified input facilitating comprehension versus unmodified input and unmodified interaction? 3) Does a better L2 comprehension result in a greater L2 acquisition? [9]

The above research has aroused the interest of other scholars. Pica's experiment on modified interaction and modified input found that modified interaction was more helpful in providing comprehensible input, which is evidence for the first research hypothesis [10]. Similar to Pica's experiment, Loshky's experiment also shows that interaction around meaning contributes to the comprehension of language input [11]. Mackey designed a research experiment in a private English school in Sydney, which shows that modified interaction was beneficial to language acquisition for L2 learners. It argues that the degree of participation and positivity involved in interaction has a positive correlation to language acquisition [12]. Such research refers to the weak version of the Input Hypothesis that it is necessary to make linguistic/conversational adjustments for SLA [13]. Although there is not enough direct evidence or authoritative research on the relationship between interactive adjustment and improved language acquisition, it is well established that modified interaction improves comprehensible input.

2.4. Output Hypothesis

The perspective of language input is based on the Input Hypothesis and Interaction Hypothesis, which is not enough to study the influence of language environment on language acquisition, then scholars have turned to the perspective of language output.

Swain proposes the Output Hypothesis based on research of immersion programs in Canada [14]. In the immersion program that French as a second language, the research found that there is a distinct difference between their abilities in this class. Their receptive abilities including listening and reading were near native-like, but their productive abilities including speaking and writing were comparatively weak. Their productive abilities did not improve as fast as receptive abilities. She speculates that this is because this kind of content-based immersion program involves mainly reading and dictation tasks and learners receive mainly visual and auditory language input without corresponding opportunities for language output. According to the Output Hypothesis, it is limited that input influences learners' language acquisition. Therefore only output can truly promote the development of language productive abilities of learners. Because language output forces learners to process language forms, only in this way can language ability be developed. Finally, Swain mentions three important functions of the Output Hypothesis: 1. Through language output, learners can find gaps between the target language and learned language in which their language develops further; 2. Learners can check their assumptions about language expressions or form by output; 3. Output can reflect on language problems and encourage learners to discuss them [15].

With similar results, some experiments also report that output can give assist learners in learning vocabulary and grammar. At the lexical level, the experiments of Ellis and He show that language output promotes learners to express more accurately, so the output task contributed to language acquisition [16]. At the grammatical level, Nobuyoshi and Eills carried out experimental studies on the English past tense, and show that by making requests for clarification, the teacher can motivate students to produce more precisely, which contributes to acquisition [17]. Izumi and Bigelow did an experiment about the reconstruction of a short passage to test the Output Hypothesis, they investigate the effectiveness of output in promoting attention and learning knowledge, and the required conditions of it in prompting language acquisition [18]. To study the noticing function of output in a more detailed way, Izumi conducted an experiment on the essay-writing tasks, and results suggest that extended opportunities to produce output and receive relevant input are crucial in improving learners' use of the grammatical structure [19]. However, some researchers argue that learners do not pay attention to language problems in their output even if they are given feedback, or that learners do not have enough meaningful output opportunities in the classroom, so the argument that output is directly decided language acquisition could be regarded as questionable parlance. In recent years, compared with previous studies focusing on output, researchers link input and output together as overall research. Through quantitative analysis of the input and

output of subjects in four domains and the comparison in terms of HR (heritage Russian) and MR (monolingual Russian) patterns of verb forms usage, Kistanova's research shows the striking interrelation between input and output in the use of verbal sentences and IMP(imperfective) aspect [20]. The findings of Ryan's research show that students who were exposed to more input scored higher in the receptive vocabulary measurement, and those who produced more output scored higher in the expressive vocabulary measurement. Given the unique contribution of input and output to students' language ability of reception and expression, Ryan suggests that both input and output should be emphasized in bilingual programs [21]. Besides, there is still a lack of direct evidence that output directly links to SLA. The only certainty is that output has a particular role in the intake of language.

2.5. The Relationship of Input, Interaction, and Output

Language acquisition is a process from language input to language output. In SLA, input is the premise, the output is the purpose, and interaction is the auxiliary means of input and output. The theoretical framework of language acquisition proposed by Ellis consists of five concepts: (1) Noticed/Apperceived input; (2) Comprehended input; (3) Intake; (4) Implicit knowledge/ Interlanguage System; (5) Output [22]. Through the above literature review of input, interaction, and output, it has been recognized that comprehensible output, interaction strategy, and output are equally important and indispensable in second language acquisition. Therefore, it is easy to find the internal relationship between these three factors by putting them into Ellis' theoretical framework.

During the process of Noticed Input to Comprehended input, Gass and Serlinker believed that four factors played a key role, including (a) emotional factor (b) learners' background knowledge (c) attention to features of input language (d) frequency of language occurrence [23]. Interaction can be one of the ways to influence these four factors. Conversation analysis is an important field of classroom interaction research, Many studies in this field focus on the impact of interaction on learners. Sandari's study of classroom interaction in teaching English as a foreign language at lower secondary schools in Indonesia provides some cases about how teachers' interaction can improve students' attention, create an active classroom atmosphere to reduce students' emotional barrier, and repeat input to increase the frequency of the language [24].

In the process of comprehended input to intake, the role of external stimulus factors should also be considered in addition to the transformation process of learners' internal language system. The literature review on the Input Hypothesis provides a basic understanding

of functions of interaction to provide comprehensible input and promote language absorption. In classroom interaction, the teacher simplifies and modifies the language to help students understand the language input more easily. Students adjust the interlanguage system by comparing the new language input with existing knowledge in the interaction. The teacher gives feedback and corrections to students' language errors or incomprehensible content. Therefore, language is both the object of learning and the medium of teaching. Most importantly, interaction is the core of language learning and classroom teaching.

In the process of intake to input, two aspects should be noted: the effect of interaction on output and the relationship between output and input. De la Fuente found that there is a direct positive correlation between the frequency of learners' language output and language acquisition [25]. Feedback is an interaction that educates learners about the misuse of their language and provides a model for the correct use of a second language. Explicit feedback and implicit feedback are two forms of feedback. Explicit feedback is a form of direct correction, such as telling the learner the wrong word in their output and explaining the correct usage of the word [26]. Implicit feedback is a form of indirect correction, including confirmation checks, clarification requests, comprehension checks, Recasts, and other strategies [27]. By giving feedback about problems in interlanguage, learners have the opportunity to pay attention to their language and realize the difference between their language and knowledge.

Comprehensible output solidifies the original language input and improves the language level of learners through corrections after receiving feedback, which provides a guarantee for input in the new stage of language acquisition. Wang's experimental results on classroom interaction and language output suggest that interaction and output both can stimulate learners' attention to the target form and play a positive role in improving language learning [28].

To sum up, in the process of second language acquisition, the relationship between input, interaction and output is mutually influenced and interdependent. Interaction is an important auxiliary means of promoting the transformation of input into the intake, it is also an important auxiliary means of promoting intake into the output. Output is the goal of input, which influences the foundation of a new stage of input. Therefore, the process of second language acquisition is a dynamic and circular system operated by the cooperation of input, interaction, and output.

3. CONCLUSION

This paper reviews Input Hypothesis, Interaction Hypothesis, and Output Hypothesis in SLA to

investigate the factors affecting language acquisition. Input is a prerequisite for language acquisition and comprehensible input is a necessary condition for the intake of language. On the one hand, to provide comprehensible input, it is necessary to strictly define learners' language level so that the input satisfies "i+1" for language acquisition, on the other hand, it is necessary for improving comprehension of input by interaction. Both modified input and modified interaction are ways to improve comprehensible input, especially the modified interaction. SLA cannot be only explained input. Hence, the output is also included in the research category. Language production of learners is the purpose of language acquisition. The output provides learners with the opportunity of the application of language competence and the check of input, and it is also a potential way to consolidate language acquisition. Output, as same as input, cannot affect the SLA level alone. All three external factors have some influence on SLA, but none of them can directly determine the level of SLA. Therefore, it is necessary to combine input, interaction, and output to explore ways to improve language acquisition, which is also a feasible way to apply in language teaching. To sum up, this paper holds that SLA is a complex system in which different factors are linked and influenced by each other. The input, interaction, and output should be equally valued and studied together. In these fields, it is meant for researchers to change the methodology that from descriptive analysis to experimental analysis. In addition, these three hypotheses do not involve learners' internal language environment processing, that is, learners' psychological processing mechanism, which is an important direction for future research.

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