

A Study of Chomsky's Universal Grammar in Second Language Acquisition

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Abstract: *Universal Grammar (UG) proposed by Chomsky (1986) has gained a large popularity in linguistics study. The paper firstly illustrates the background and major contents of UG and second language acquisition (SLA). Then it addresses the three hypotheses of UG in SLA, which center on whether adult language learners have access to the principles and parameters of UG in constructing the grammar of a second language (L2). Furthermore, the paper investigates problems of UG in application of SLA and discuss elaborately on the recent challenge that UG encounters in the field of SLA.*

Keywords: *Universal Grammar; principles and parameters, second language acquisition*

1. INTRODUCTION

In linguistic field Chomsky's theories on language learning are widely discussed. This paper tends to show recent development in L2 learning through Chomsky's principles and parameters in UG, as many scholars have their opinions on Chomsky's theory on universal grammar and have their own takes on it. More recently arguments on application of UG in SLA seem to be in a favorite position, though Chomsky does not extend this theory into SLA, thus issues on individual interpretations of the theory on SLA are necessary. Three specific hypotheses under the framework of UG are addressed from this perspective and review with supporting evidence, along with this major criticisms that UG faces with in the field of SLA are investigated.

2. UG AND SLA

In the field of linguistics, an issue that has prompted considerable debate is the question of whether linguistic capacities are innate or not. One is the nativist who claims that children are born with some linguistic knowledge. The other is the empiricist. They assert instead that children acquire language from linguistic experience. Since 1940s, the behaviorism has occupied a dominant position in interpreting the language learning. The behavioral theory holds that language learning is a process of stimulus and response. However, some evidence in support of the nativist view comes from children with limited linguistic experience. In certain situations in which the child is not presented with any consistent linguistic model, they appear to have the capacity to invent some aspects of language (Carroll, 42). This gave insight for Chomsky's innate of language. Originally, he puts forward language acquisition device to refer to the innate mechanism of language learning and late he illustrates UG as a way to introduce his idea.

Chomsky believes that UG is special device of human brain which can help people learn language quickly. It is an unconscious and potential knowledge which exists in human brain without learning and determines the existing appearance of human language. Chomsky uses UG to account for first language learning. In 1994, Cook stated that UG approach tries to account for the nature of language representation, the nature of language learning and the nature of language use. Essentially, UG approach is trying to characterize what structures and processes the child brings to the task of first language acquisition, drawing on the two central concepts of principles and parameters (Skehan, 76).

Just as Cook stated in his article named *Chomsky's Universal Grammar and Second Language Acquisition* that the language properties inherent in human mind make up UG, which consists, not of particular rules or of a particular grammar, but of a set of general principles that apply to all

grammars and that leave certain parameters open. UG sets the limits within which human languages can vary. Carroll (2005) defines parameter as a grammatical feature that can be set to any of several values. For example, the null-subject parameter deals with whether a language permits constructions that have no subject. This parameter has two values: null subject (the language allows sentences without a subject) or subject (the language requires subjects for sentences to be grammatical). For example, sentence (1) *want more apples* is not grammatical in English, but it would be fine in Italian or Spanish. Thus Italian is a null-subject language, and English is a subject language. Another parameter is pro-drop which is about the relationship government between Subject and Verb. Pro-drop parameter consists of two kinds of parameter settings. One is pro-drop and the other is non-pro-drop. While Chinese is a pro-drop language and English is a non-pro-drop language. For example, in sentence (2) *it is raining*, which cannot be omitted because every English sentence must have a subject. However, Chinese sentence (3) *xia yu le*(下雨了). This sentence illustrates that Chinese is pro-drop as empty subject can occur and inversion can take place. Thus Chomsky asserts that the grammar of a language can be regarded as a particular set of values for these parameters while UG is the overall system of principles and parameters. Furthermore, Hyams's parameter-setting theorists also indicate that children were born not only with the parameters and but also with the values of the parameters.

Chomsky's UG approach, especially the principles and parameters, to language learning is a significant turn at the time. Furthermore, a UG interpretation has been extensively used to explain the first language acquisition, where it has the strength to address theoretically the projection problem (the way in which learner know more than they could have learned from the input to which they have been exposed) (Skehan, 77). To conclude, UG has indeed given a precisely explanation to language learning, especially the native language learning, which is a part of reason why UG is of significance in the field of linguistics.

Meanwhile, SLA becomes a field in its own right since 1960s, marking the serious study on the theoretical implication of observed language behavior. Moreover, many conferences and journals are devoting to the studies of SLA. In 1980 it is possible to read nearly everything that has written about SLA theory and related studies to keep up with the newest current ideas. Nowadays the field of SLA is in a boom along with enormous scope and depth both in terms of the variety of topics under investigations and the research approaches used to investigate. Even today it is obvious that a continued increase in the publication of the field.

Furthermore, the study of SLA focuses on the developing knowledge and the use of language by children and adults who already know at least one other language. The field of SLA study seems to be important both theoretically and practically. The theoretical importance is closely related to our understanding of how language is represented in the mind and whether there is a difference between the way language is acquired and processed and the way other kinds of information are acquired and processed. The practical importance arises from the assumption that an understanding of how languages are learned will lead to more effective teaching practices. In a broad context, knowledge of SLA may help educational policy makers set more realistic goals for programmes for both L2 courses and the learning of the majority language by minority language children and adults. SLA is useful both for language learning and language teaching. As for the teaching methodology, second language acquisition has also given insight to it. Many scholars who are interested in L2 teaching methodology are also closely related to SLA study.

At the same time, three advances in the field of SLA should be mentioned. Firstly, the disentanglement of issues concerning L2 learning development from issues related to L2 classroom processes; secondly, the discovery that the Contrastive Analysis Hypothesis (the behaviorist-driven view that L2 development is attributable to the transfer of habits from the first language onto L2) was empirically inadequate; thirdly, the falling into disrepute of Lenneberg's (1967) Critical Period Hypothesis for language acquisition. If Critical Period Hypothesis cannot be maintained with any certainty, then adult SLA can no longer be regarded as 'peripheral' to the interests of linguistic theory, and comes to assume the same status as L1 acquisition as a 'testing ground' for linguistic theory (Roger: 211).

However, critical period put forward by Lenneberg (1967) is a controversy in the field of SLA. The critical period hypothesis holds that language acquisition should occur before the onset of

puberty in order for language to develop fully. And this hypothesis advanced by Lenneberg only exists in the course of first language acquisition. One strong support of this hypothesis is from perspective of accent. However, Lenneberg leaves open question of whether this critical period extends to SLA, which will occur after a first language is already in place. Many researchers supporting critical period in SLA believe that UG is not available to SLA, which is a controversial question, but evidence concerning age effects on L2 learning can contribute to a further delineation of critical period accounts.

3. THREE UG HYPOTHESIS FOR SLA

In late 20th century, many scholars explore the logic problem of language acquisition when the finding that children seem to have knowledge that cannot be gained by observations and imitations from the adult arose. Chomsky argues that the knowledge is richly articulated and shared with others from the same speech community, whereas the data available are much impoverished to determine it by any general procedure of induction, generalization, analogy, association or whatever (1986:55). In Chomsky's word, the knowledge of language is not learned and the part of core of UG is biological endowment. Chomsky's UG provides a faithful explanation for the logical problem of the first language acquisition. While with the development of SLA, many scholars are researching on the logic problem of SLA, particularly the adult L2 learners.

Most studies dealing with language universals and SLA is illustrated from the perspective of UG. UG is mostly often a term refers to the study of universal core hypothesized by Chomsky and others to underlie all natural language (in contrast, for example, to the artificial languages of computers) (Odlin: 267). It is well-known that there are many approaches to language universality. However, Chomsky's approach has gained much popularity. One of the major reasons is that it provides us a way of emphasizing the significance of child language acquisition. It is no doubt that numerous linguists are still doubtful on the accessibility of UG to the acquisition of second language or a foreign language. It is noticeable that many linguists are researching on that whether UG are available to L2 learning or not.

With regard to SLA, the question is more complicated. On one hand, the first language is available to L2 learners. On the other hand, the end result of L2 learning is not native-like competence as it is the case in the first language acquisition. Thus current research mainly focuses on the extent that L2 learners have access to the innate system, especially the concept of principles and parameters. Hence three different types of schools arose, which are as follows: the direct accessibility, the indirect accessibility and the inaccessibility.

As Cook states that the most fundamental different property is L2 learners possess a grammar of native language, incorporating the principles of UG and specifying a particular set of values for its parameters. Two possibilities of L2 learning need to be considered: the learners might have access to UG either directly or indirectly with the help of the first language. Some studies suggest that L2 learners behave according to the percepts of UG parameters—the access position (e.g. Broselow and Finer 1991); other studies suggest the positive non-access position (e.g. Bley-Vroman 1989). Still others argue that L2 learners have access to UG through their native language- the indirect access position (e.g. White 1986) (cited in María del Pilar García Mayo, 47). Correspondingly, different hypotheses appear with supporting ideas and experiments to examine the application of UG in SLA.

The direct accessibility hypothesis asserts adult learners learn both first and L2 by setting parameters to UG. So if UG can be used in the first language, it also can be applied in L2 learning. L2 learner makes full use of UG including the part which is not reflected in his mother tongue. L2 learner's grammar knowledge is determined by the degree of UG. The contributions of Flynn and White are representative of general approach adopted concerning the accessibility of UG in SLA. Therefore these will be illustrated in detail in this essay.

Flynn investigates the development of binding conditions on pronominal anaphora in L2 English and whether that development is influenced by the parameter settings of learners' first language. Flynn compares two groups performance of L2 learners of English (a head-complement of language) , the first from an L1 background that is also a head-complement language (Spanish) ,

the second from complement-head L1 backgrounds (Japanese and Chinese), on an elicited imitation task. The result suggests that there is indeed a significant difference in the two groups. While the Spanish learners show a preference for forward antecedent-pronoun binding in English fairly early on in their development, the Japanese or the Chinese learners at the same stage of the development show no significant preference for either forward or backward antecedent-pronoun binding in English, but at advanced stages of acquisition acquire a preference for forward binding. Flynn takes this to be evidence that her Japanese or the Chinese subjects reset the value of head-parameter for English, whereas the Spanish learners have recognized (unconsciously, of course) early on that value of head-parameter is the same in both Spanish and English, and have simply transferred the value from their L1 to L2. To conclude, it can be seen that Flynn's experiment has shown the reset of head-parameters, which is an evidence of the accessibility of UG to SLA.

White explores on the parameter models on the basis of Flynn, who explores on mainly on two questions. The first is the absolute constraints that UG imposes on language acquisition and whether such constraints apply to SLA. The second is the effects that particular L1 parameter settings may have on the way in which L2 learners develop the parameter settings of the L2. White uses the approach of grammaticality judgment to let the L1 French learners of L2 English do the comprehension task. The result suggests that L2 grammars are generally constrained by Subjacency (with some apparent resetting of bounding nodes between French and English). White (1986) found that the Spanish learners can apply the knowledge of pro-drop parameters into the L2, which is evidence that shows the indirect accessibility of UG in SLA. White argues in her book named *Universal Grammar and second Language Acquisition* that UG is available but only in a limited way. In other words, although L2 grammars are still consistent with universal principles of all human languages, learners tend to perceive the L2 in a way that is shaped by the way their L1 realizes these principles. It seems that UG plays a more restricted role in L2 than first language learning. Part of reason is that language transfer. In other words, acquiring L2 has recourse to their native language, not just to the principles and parameters that children use to learn L2. However, scholars also question on White's analysis, including markedness. While White considers UG is full of value, but with some limitations.

White's study on the application of UG to SLA is in support of the indirect accessibility hypothesis. Generally speaking, this hypothesis assumes that UG works in SLA through the grammar of mother tongue. When the parameter setting of L2 is different from that of first language, L2 learner cannot use the parameter which has been lost in UG. They can only reset the parameter of mother tongue grammar.

Clahsen(1986) made a study on the word order acquisition. He makes a comparison between two groups. One is learners for whom German is their native language and the other learners for whom German is the L2. It was found that the learners in the first group learn the SVO first and then acquire the knowledge of SOV. Furthermore, the second group just the opposite. So Clahsen argues that UG plays no role in the SLA, that is to say, UG is inaccessibility to SLA. Clahsen contends that though it is certain that UG is available to child L1 learners, UG is unavailable to adult L2 learners of German. He argues that L2 learners construct grammars on the basis of general problem solving strategies. That is the third hypothesis, namely the inaccessibility of UG in SLA.

Inaccessibility hypothesis denies all the influence of UG on SLA, assuming that the parameters of UG have been set in the process of first language acquisition, which cannot be reset. Tasks of L2 learners is finished by their psychological device and cognitive strategies, suggesting that only first language learner can get access to UG. Therefore the inaccessibility hypothesis only sees the value of universal grammar in the first language learning but denies the influences of UG in L2 learning.

However , Clahsen's opinion is alone among the syntactic studies in offering an opposite view. That is to say, compared to other linguists who also do the syntactic studies, Clahsen's syntactic study is the only one who proves that UG is not available to L2 learning. Based on her pervious syntactic researches, Mazurkewich's contention is that L2 order development is influentially determined by the syntactic markedness. Similarly, Liceras also studies from the perspective of

markedness, looking at the transfer of preposition stranding and development of relative pronouns in the L2 Spanish of first language English. Felix investigates a range of phenomena controlled by principles of UG in the L2 English of first language German college students. What is interesting about all these syntactic studies is that, whether particular proposal turn out eventually right or wrong, the incorporation of UG into the formulation of hypotheses has led to clear and empirically testable predictions. UG gives support for specific programme in SLA, and these studies are good example of current work within the programme.

It is noticeable that different linguists have their different points of view. However, Margaret (2006) asserts that although a number of concepts surrounding both UG and SLA have emerged in different forms for many centuries. Most contemporary linguistic researchers approach the study of UG and SLA with a profound lack of historical consciousness (Larry LaFond: 961). That is to say, UG in SLA is a remarkable contribution to the history of linguistics and will be essential reading for students and scholars of linguistics, specialists in SLA and language teacher-educators. Therefore, UG makes enormous contributions to L2 learning, so it is inappropriate to deny the roles that UG plays in language learning. Though three different theoretical hypotheses argue different perspectives with regard to L2 learning, it can be also seen that UG plays an indispensable role in the study of language learning, especially the systemic explanation for the first language learning.

4. THE PROBLEMS OF UG IN SLA

Many researchers states that there are problems that UG applies to SLA, for example, Fries and Palmer. They argue that there is wide acceptance of the challenge that the existence of cross-linguistic differences makes SLA extremely different from first language acquisition. Many arguments put forward by linguists are as follow:

It is well-known that Chomsky's UG is put forward in response to the logical problem of the first language acquisition. At the same time, since 1970s, the rapid development of SLA has led linguists to focus on the UG in SLA. It is known that the discovery that L1 and L2 have similarity in the 1970s has given an impetus to the SLA. For example, there are similarities in the development of a number of morphemes and of negative and interrogative structures in English in first language and SLA. Children learning negative constructions in their first language go through well-defined stages. L2 learners also go through fairly rigid stages when acquiring certain constructions in the L2, which are neither like the first language or the L2 they are exposed to nor are like the stages children go through. However, it is until recently that researchers are addressing on the differences between first language acquisition and SLA. Thus the biggest differences between first language acquisition and SLA are as follows.

Firstly, the process of first language acquisition is natural and unconscious while the SLA is conscious. Secondly, cognitive ability of children is still in the immature stage while that of adult is already mature. Thirdly, the environment of first language acquisition and that of SLA are different. Fourthly, the input modes are different. Children get first language input through spoken language. Adults get L2 input through spoken language, written language as well as notation. Last but not least, In the process of first language acquisition, there is no interference from other language. But L2 learner uses mother tongue constantly. Mother tongue and L2 knowledge will interact with each other somehow.

Some linguists have made specific distinction between first language acquisition and SLA. Chinese linguist Zhang puts forward her understanding, arguing that the application that UG to SLA is complicated because of the fundamental differences. She states that L2 learners are cognitive mature, L2 learners already know at least one language and L2 learners have different motivations for learning an L2. That is to say, what makes L1 acquisition different from SLA is the fact that L2 learners begin the L2 learning with a well-formed first language acquisition system, a more mature cognitive capacity and an advanced learning mechanism. Zhang states that this continues to be a central issue and deserves painstaking efforts. In fact, many researchers have decided that the processes of the first and SLA are so different that they can account for them with totally separate theories. For example, Krashen distinguishes first language learning from L2 learning, who observes first language learning as involving 'acquisition' and L2 learning as based on instead on 'learning'.

With the advanced research and focuses on UG and SLA, most scholars believe that UG is available to L2 learning. However, due to the differences between first language acquisition and SLA, most linguists agree with the indirect accessibility hypothesis. That is part of reason why so many researchers are in support of the indirect accessibility of UG to SLA. They see both the influences of UG in L2 learning and the fundamental differences between the first and SLA.

There are also other problems concerning with the UG approach to SLA. Just as Skehan points out in his book named *A Cognitive Approach to Language Learning*. The paper focuses on three different problems. Firstly, there is the problem that UG itself cannot stand still, but this problem is very vital of the field in many perspectives. It is that many researchers working within UG may be satisfied with this state of affairs. However, the ‘consumers’ interested in the explanatory value the account can provide in related areas rather than the developments in linguistic theory for their own sake, find themselves stranded since the version of the theory they are diligently testing proves to be abandoned by UG researchers themselves. Given this state of affairs (and its likely continuation in the future, with even newer versions of the theory supplanting one another), the attractions of the approach wane considerable. Secondly, there is an issue that UG researchers focus on what the underlying theory deems to be important. In other words, the agenda is set from the fundamental discipline. So in many ways, are the research methodology and the data collection. Each of these factors poses problems for SLA and language teaching. However, many of the issues that the language teaching profession consider important do not receive high priority in UG studies. Similarly, methods of eliciting competence-oriented language seem a long way away from the concepts of proficiency that language teachers and L2 researchers take for granted. As a result, there is a remoteness about UG studies as far as ongoing L2 development is generally concerned, a lack of external validity which, quite apart from the experimental evidence, undermines the relevance and significance of the UG-based account. Thirdly, UG does not complement effectively the processing perspective which is fundamental to the current approach essentially. There are two perspectives to the issue. One is the approach of human language development after the critical period. Here, it is assumed that the critical period exists. The other is the way in which for older learners. In general, Peter states that the UG approach to language acquisition will remain pretty much in the background.

5. CONCLUSION

Chomsky’s UG is a significant theory in the field of linguistics and it has given a solid explanation of the way that how child learns languages. It is a fundamental and significant turn or shift from the behaviorist opinion. The principle and parameter, logic concept of UG, has gained much focuses from the linguistics. It is full of value in understanding language learning. Meanwhile, with the quicken development of SLA, Though different viewpoints appear concerning the UG approach to language learning, it is not appropriate to deny the role that UG plays in language learning. To conclude, it can be seen that there are many problems concerning the UG approach to SLA, which mainly include the fundamental differences between the L1 and L2 learning and numerous specific problems concerning language processing, cognitive mechanism as well as other issues. Through analyzing the problems, it can be better understood what will be mainly focused on in the later researches of the field of linguistics, so that the progress can be moved forward to language learning and SLA.

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