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The Universal Grammar Theory: Noam Chomsky's Contribution to Second Language (SL) Education

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Abstract

This paper aims at reflecting the recent development in Second Language (SL) learning through Chomsky"s principles and parameters in Universal Grammar, as many scholars have their opinions on Chomsky"s theory on universal grammar and have their comments on it. Universal Grammar (UG) proposed by Chomsky (1986) has gained a huge popularity in language and linguistics study. The paper discusses the relevance of Universal Grammar to Second Language Acquisition (SLA) from different aspects: accessibility of UG, L1 and L2 acquisition differences, learning models, poverty of the stimulus argument, and debates on principles and parameters in SLA. Then, it addresses the three hypotheses of Universal grammar in Second Language Acquisition (SLA) which focuses on whether adult language learners have access to the principles and parameters of UG in constructing the grammar of a second language. Moreover, the paper investigates shortcomings of UG in application of SLA, and discuss elaborately on the recent challenges that UG faces in the field of Second language Acquisition (SLA).

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

1. Introduction

In the field of second language acquisition, Chomsky"s theories on language learning are widely discussed and practiced. More recently arguments on application of Universal Grammar (UG) in Second Language Acquisition (SLA) seem to be in a preferred place. During 1960s, the linguists became interested in a new theory about grammar of language. The theory was popularized by Noam Chomsky who focused on the effortless language learning of young children. Chomsky didnot believe that exposure to a language was enough for a child to become efficient in a language. He maintained that humans are born with an innate ability to learn a language. According to UG, the basic structures of language are already encoded in the human brain at the time of birth. UG suggests that every language has some of the same laws and systems. For example, every language has a way to ask a question or make something negative or positive. Furthermore, every language has a way to identify a gender or show that something occurred in the past or present. The theory says that the basic grammar laws are the same for all languages, a child needs only to follow the particular set of rules that his peers follow in order to understand and produce their native language. His environment determines which language he will use, though he is born with the devices to learn any language successfully.

Three specific hypotheses under the framework of UG are addressed from academic perspective and review with supporting evidence, along with major criticisms that UG faces in the field of second language teaching and learning are investigated. This study first gives an overview of Noam Chomsky's Universal Grammar Theory within the framework of overall SLA research. It critically reviews the hypotheses, examining major arguments, shortcomings, vagueness of the

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construct, the simplification of input; and over claims that he made about the UG. Brown (2000) finds it as a subset of general human learning and arrays the elements that should be included in a theory of SLA:

> (…) involves cognitive variations, is closely related to one's personality type, is interwoven with second culture learning, and involves interference, the creation of new linguistic systems, and the learning of discourse and communicative functions of language. (Brown, 2000, p.271)

In brief, a general SLA theory needs to take into account any language acquisition by learners with a variety of characteristics in a variety of contexts. The following are some of the attempts to explain SLA common to a variety of learners and contexts. With slight variation, SLA theories are grouped into three categories: linguistic, psychological, and socio-cultural theories.

2. Linguistic Theory and UG

Universal Grammar is an accurate theory as it explains the underlying linguistic knowledge in second language learners' mind. According to Noam Chomsky, UG spotlights to answer three basic questions about human language: What constitutes knowledge of human language? 2. How is knowledge of language acquired by children? 3. How is knowledge of language put to use in communication? The UG claims that all human beings inherit a universal set of principles and parameters that manage the shape human languages. It provides a detailed descriptive structure which enables researchers to prepare well-defined hypotheses about the task facing the learner and analysed in more focused manner. Chomsky (1978) proposed principles are unvarying and applicable to all natural languages; on the contrary, parameters possess a limited number of open values which characterise differences between human languages. However, recently he argues that the core of human language is the lexicon which can be characterised as: lexical categories and functional categories.

Chomsky first expresses the concept of UG. He believes that children could not learn their first language so quickly and naturally without the help of an innate language faculty. Children create a mental representation of language image which not only goes beyond the input they are exposing but also achieves at an age when they have difficulty grasping abstract concepts. Moreover, learners of SLA are cognitively mature, therefore, they are practical to solve their problems and deal with abstract concepts. UG is concerned with knowledge of language that is with the abstract mental representation of language and the computational mechanisms associated with it, which all human possess called competence not performance. A complete theory is to define how we access our knowledge base, and how it relates to a number of sociolinguistic and psycholinguistic variables.

3. Universal Grammar and Second Language Acquisition

In the field of language education, an area 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 a set of linguistic knowledge. The other is the empiricists view that all concepts originate in experience, that all concepts are about or applicable to things that can be experienced, or that all rationally acceptable beliefs or propositions are justifiable or knowable only through experience of learners. The behaviorism has occupied a dominant position in interpreting the language learning since 1940s. The behavioral theory believes 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, they appear to have the capacity to invent some aspects of language (Carroll, 42). Chomsky''s puts forward language acquisition device to refer to the innate mechanism of language learning and late he illustrates UG as a means to introduce his thought. Chomsky believes that UG is special device of human brain

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which can help people learn language fast. It is an unconscious and prospective knowledge which exists in human brain without learning and determines the existing appearance of human language. In the following sections the Universal Grammar approach from five specific areas of SLA research will be discussed:

3.1 Accessibility of Universal Grammar (UG)

Mitchell & Myles (2004) has made a comprehensive review of different theoretical positions regarding access to UG in SLA. These positions can be generally classified into three groups: no access, full access and partial access to UG. Proponents of no access position argue that there is a critical period for language acquisition. After that period, Universal Grammar will be no longer available (1989). Adult L2 learners thus have to resort to other learning mechanisms or strategies to learn L2. Their second language is learnt in the similar way as any other aspect of knowledge. Researchers who adopt full access position believe that Universal Grammar continues to operate for adult L2 learners. All the parameters of UG are available and can be reset. Supporters of partial access hypothesis also realize the important role of L1 in SLA, and propose that UG can only affect SLA indirectly via the L1. That is to say, only those principles and parameter settings acquired in L1 are available to L2 learners. If there are some other different parameter settings in L2, learners have to use other mechanisms and problem-solving strategies to learn the new language (1996)

3.2. L1 and L2 Acquisition Differences

The L2-L1 have several contextual differences in Second Language Acquisition (SLA): (1) First Language (L1) is already present; (2) Second Language (L2) learners are cognitively mature, but L1 learners have to attain their language competence along with other cognitive abilities; and (3) Input involves written as well as spoken language. Thomas (2004) points out some key differences between children's L1 learning and adult L2 learning, which involves the following: L2 learning may face and challenges of fossilization and L1 transfer; however, L2 learners have different motivations for learning an L2. Mitchell & Myles (2004) also suggest that L2 learners' needs are very different, because they are already "successful communicators in one particular language". Their skills to solve problems and deal with abstract concepts are relatively high and relatively accurate. However, a few L2 learners succeed in achieving near native competence because L2 learners may easily get satisfied with their interlanguage and their ability to communicate efficiently. Besides, White (1989) also discusses L1 and L2 acquisition differences from the standpoints of instruction and correction. It is believed that "explicit instruction and negative evidence" are not functional in L1 acquisition; on the other hand they are considered to be effective and necessary in second language learning.

3.3 Learning Models in UG

Chomsky (1964) recommends the Language Acquisition Device (LAD) hypothesis to explain how a human language is acquired by children. In principle, the LAD model can exhibit the process of acquisition of any natural language. For example, L1 input data are provided; then, the input in processed in the black box which contains UG principles and parameters; and finally, L1 grammar is produced. In the context of SLA, we can adapt the LAD model to L2 learning by simply extending the model to take in L2 input. However, Cook and Newson (1996) argue that the LAD diagram cannot represent the initial state of L2 learning due to the differences in L1 and L2 acquisition. Children develop their L1 and finally reach a steady state of knowing many things of the language.

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3.4. Poverty-of-the-Stimulus Argument

Chomsky raised "Plato's problem" in 1987 and regarded as an important attraction in theory development. The argument touches the core of the UG model. The structure of the argument is summarised into four steps by Cook (1996): (a) a L1 speaker knows a particular aspects of syntax; (b) this aspect of syntax cannot be learnt from the L1 input; (c) this aspect of syntax is not learnt from outside; and (d) this aspect of syntax is built-in to the mind. As this argument initially works for L1 acquisition, anyone may come across some problems when it is used for examining SLA. Firstly, the piece of knowledge in Step-1 is regular to all speakers in L1, while it may vary from person to person in SLA. Secondly, in Step-2, difference in input data is unrelated to First Language Acquisition (FLA). While L2 learning may be influenced by L1 transfer and some other type of evidence in the classroom which is unavailable to L1 child. Thirdly, Step-1 and Step-2 need to be modified because of different knowledge and evidence between L1 and L2 acquisition. Finally, the modification of the first two steps will increase the uncertainty of Step-3 and Step-4. In reality, the argument cannot be easily employed to L2 learning due to the complex nature of SLA. However, the poverty-of-the-stimulus argument is still an original method that can be properly used to examine the availability and functions of UG to SL Acquisition.

3.5 Parameters and Principles of UG

Principles are structural features that are common to all natural languages; hence, they are part of the child's native endowment. Universal Grammar (UG) approach claims that there is a universal set of principles and parameters that control the shape of human language. According to White (1989), languages can differ as to which functional categories are realized in the grammar. Features are said to vary in strength and a feature can be strong in one language and weak in another. For example, inflections are strong in French and weak in English. In SLA, UG principles are generally considered to be available since L2 learners do not break those principles in producing their interlanguage. This fact indicates that interlanguage is also "qualified" languages controlled by Universal Grammar. Current debates in research pay more attention to the availability of specific parameters, and parameter re-setting.

4. The UG Hypothesis for SLA

Chomsky (1986) argues that the knowledge is richly articulated and shared with others from the speech community. He suggests that the knowledge of language is not learned and the part of core of UG is biological endowment. The UG provides an authentic description for the logical problem of the first language acquisition. Chomsky"s approach has earned much popularity. One of the major reasons is that it suggests us a way of emphasizing the significance of child language acquisition. It is evident that many linguists are conducting study on that whether UG are available to L2 learning or not. Thus, this paper 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: (i) the direct accessibility, (ii) the indirect accessibility,(iii) and the inaccessibility.

The direct accessibility hypothesis emphasizes 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 second language learning. Second language learner makes full use of UG including the part which is not reflected in his mother tongue. It is focused that the second language learners' grammar knowledge is determined by the degree of UG. The indirect accessibility hypothesis assumes that UG functions in SLA through the grammar of mother tongue. When the parameter setting of SL is different from that of first language, SL learner cannot apply the parameter which has been lost in

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UG. Clahsen (1986) makes a comparison study with two groups. First group speaks German as their native language, and the other learners speaking German as L2. It was found that the learners in the first group learn the subject- verb –object (SVO) first and then acquire the knowledge of SOV. So, Clahsen argues that UG plays hardly any role in the SLA. So, it is to say, UG is inaccessible to SLA. Inaccessibility hypothesis rejects 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 are 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. Brown et al. (2006) asserts that a number of concepts surrounding both UG and SLA have emerged in different forms.

5. General Arguments for Universal UG

Over the decades, a number of arguments have been put forward in support of the UG hypotheses. The UG states that all human languages share certain properties. Children are exposed to different input; but converge on the same grammar. They gain knowledge for which there is no evidence in the input. Speakers know which structures are ungrammatical and they do not acquire over general grammars in spite of the fact that they are not exposed to "negative evidence". It focuses that humans are the only species that has language. Usually, children learn language quickly and effortlessly, on minimum exposure. Every child acquiring language passes the same stages in the same order. Language acquisition is very responsive to maturational factors and relatively insensitive to environmental factors. It is said that different brain circuits are responsible for representing/processing linguistic and non-linguistic information. That is to say, Universal Grammar (UG) in Second language Acquisition (SLA) is a remarkable contribution to the history of linguistics and will be essential reading for students and scholars of linguistics, specialists in Second language acquisition 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, UG plays a crucial role in the study of language learning, especially the systemic explanation for the first language learning.

6. Pedagogical Implication and Conclusion

To draw some pedagogical implications for SLA and ELT, two points can be focused. Firstly, teachers should provide adequate authentic language materials to raise students' awareness of first language and second language differences, and facilitate their processes of hypotheses revising and parameters re-setting. Secondly, the explicit instructions and correction are very useful in English language teaching. Chomsky's UG is a significant theory in the field of linguistics. It has given a solid explanation of the way how a child learns a language. It is a fundamental and significant turn or shift from the behaviourist opinion. The principle and parameter of UG have gained much focuses from the linguistics. It is full of value in understanding language acquisition. However, it can be said that there are a few problems concerning the UG approach to SLA, which mainly include the fundamental differences between the L1 and L2 learning, and a number of problems concerning language processing, cognitive mechanism as well as other issues. It can be better understood what would be mainly focused on in the later researches of the field of linguistics so that the progress can be moved forward to SLA.

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