Reviewing the Mainstream Theories of First Language Acquisition: Does Innate Knowledge of Languages exist?

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Abstract: The aim of this paper is to discuss whether innate knowledge exists and to review the Mainstream theories of First Language Acquisition (FLA). The debate surrounding whether infants have an innate knowledge of languages started around the 4th century BCE, when Plato first raised this question and attempted to answer it. Plato's student, Aristotle, disagreed with Plato about the existence of innate ideas. The disagreements between the two philosophers inspired people to further discuss the matter in the future. People, such as Tomasello, Chomsky, and Halliday all tried to answer this question. Tomasello came up with the Usage-based approach, which centralizes on meaningful interactions between infants and adults. Chomsky suggests that there is an innate grammar -- the UG (Universal Grammar) -- that helps infants to learn their first language. Halliday's systemic functional approach suggests there is no innate knowledge of language, and infants all learn their first language after they're one years old. We believe that this paper could be suitable to those researchers, teachers and students whose interest is FLA. Nonetheless, this paper does not specifically review the child FLA in a multilingual society. We believe that linguistic research can further focus on this gap in the future.

1. Introduction

There are four different theories in FLA reviewed in this paper: Plato's innate ideas, Tomasello's usage-based approach, Noah Chomsky's Universal Grammar (UG) and M.A.K. Halliday's Systemic Functional Linguistics (SFL). Nowadays, there is a heated debate about FLA: Is there any innate knowledge that could help children acquire their first language? To this question, two main different ideas are now in the mainstream. One is Chomsky with a positive answer, while the other is Halliday, who believed that infants are born with no grammar. Chomsky has created the UG theory to support his ideas, which has aroused great concern in the field of linguistics in the 20th century. However, Halliday proposed the SFL to challenge Chomsky, noting the function of grammar and its function in child's FLA. In this paper, all theories will be showed in three parts. The theories of Chomsky and Halliday will be analyzed in the last part since they're now the modern mainstream theories in FLA.

2. The Pioneer of FLA: Plato's Innate Idea

2.1 Introduction to Innate Idea

How did the infants acquire their first language? Do they learn "naturally"? These have been the questions that attract scholars' attention since the fourth century BCE, as early as ancient Greece.

One of the first people who asked this question and made an attempt to solve it is the Greek philosopher Plato. During Plato's times, there were two main arguments. The first one suggests infants acquire language through experience. The second suggests infants acquire language through

"innate resources". It is the latter belief that Plato believes in. Plato was the first philosopher who supports the "innate resources" belief [1].

The innate idea suggests that since the FORM of language is already there, the infants already have some insights into language [2]. They just need to "recollect" their knowledge of language, and that is exactly what they did after they were born. The main reason for Plato's idea is that he believes that knowledge is recollection. It is in his doctrine that knowledge already exists, and we are just recollecting it. In this case, language is a FORM of knowledge in the non-changing world of knowledge, and the infants are recollecting the FORM of language. Hence, the idea about language is acquired innately fits well into his belief.

2.2 The Counter Arguments of Aristotelian Scholars

Not everyone agrees with Plato's idea of "innate knowledge". Aristotle, one of Plato's students at the Academy, for example, disagrees with the idea of his teacher greatly. He does not believe in the existence of any sort of innate idea or innate knowledge. He believes that infants were born like a tabula rasa, or a blank state. Aristotle does not believe in any "innateness" of things, so as a result, he rejects Plato's innate idea completely [3].

Some modern scholars also disagree with Plato's idea of innate knowledge. Immanuel Kant, a modern German philosopher, also disagrees with the idea of innate knowledge [4]. In particular, Kant argues that 'universal transcendental concepts of the understanding', i.e., the categories, are 'acquired and not innate'. Kant believes that there should be no such thing as innate concepts and understandings, and we all acquire them later, from experiences in life.

However, despite some modern scholars' counterarguments towards Plato and his idea, some scholars also agree with Plato's arguments, including Gottfried Welhelm Leibniz, a professor at Cambridge University. He argues that "we find intellectual ideas in ourselves without having formed them" [4]. This means that Leibniz supports Plato's idea that infants learn their first language innately, since the idea of language is not formed by the infants, but "found" by them.

2.3 Summary on Plato's innate idea

There are people who agree and disagree with Plato. Plato's "innate idea" is an interesting attempt to try and solve the mystery behind an infant's process of acquiring their first language. Nevertheless, Plato's attempts have inspired later philosophers and linguists to explore more and more in this field. No matter whether people agree with Aristotle, or Plato, both of the ideas and concepts given might not be the truth. There must be a truth behind it, and therefore, we should keep looking, and try to find a better answer.

3. Usage-based approach to First Language Acquisition

Tomasello is one of the most famous linguists in the world. He proposed the usage-based approach to language acquisition [5]. His arguments are mainly about language development, focusing on modern-day cognitive and functional linguistics. As one of the functional theories, the usage-based approach to language acquisition challenges the Universal Grammar-based (UG-based) theory by Noah Chomsky [6], who argues that children were born with innate knowledge of the principles of Universal Grammar (UG). UG is conceptualized that all human languages are governed by a set of abstract principles, which are common properties in the world [4].

Different from Chomsky's theory, functional theories take notice of the use of language in not only real performance but also underlying linguistic competence [7]. One of the representatives of functional linguistics, Halliday, holds the opinion that "Learning one's mother tongue is learning the uses of language and the meanings, or rather the meaning potential, associated with them" [8]. People ought to learn how to use their first language in real life, and how to convey their meanings to others; only then they could truly learn their native language.

3.1 Introduction to the Usage-Based Theory

Usage-based theory holds that a person's creative linguistic competence shows up from the

collaboration of the memories of all the meaningful interactions in their language usage [9]. This means that an individual's language system comes from their speech in communicating with each other. Budwig [10] suggests that the approach of this theory is more closely with the activity that can make meanings. People actually construct meanings in their discourse and social interaction with awareness [11]. The crucial parts that a meaningful language uses are shared attention, cooperative activity, and shared cognition [12]. If a person speaks his language without joining social activities, his utterance couldn't catch people's attention. The effect of his language acquisition wouldn't be as good as in social activities, because, during the discourse with others, people will try their best to make their speech understandable so that the conversation can be meaningful. In this method, they can correct their mistakes by looking at hearers' reactions and improve their language ability and skill, which is not possible in speaking alone.

According to Tomasello [13, 14], the central process of children's language acquisition is listed as followed: From day one to 2 years old, infants have a process of development of their abilities to detect attention (gaze following), to manipulate attention (directive pointing), to understand intention (the realization that others are goal-directed), and to use social coordination with shared intentionality (participating in cooperative activities with a shared interest, negotiating meanings). The process indicates that understanding the meaning of the language is based on understanding the intention. With this development of their capability of communitive intention, the children are able to acquire his native language as a communicative approach.

In terms of children's grammatical development, the theory proposes that children form generalization by analyzing the input, the speech they hear without the benefit of categories and rule types encoded in UG; the development relates closely to the properties of the input, for example the lexical content or relative frequency of structures [15]. This means that the grammatical system of a child comes from the external interaction, and the child will form their sentence grammar through analysis of the discourse.

3.2 Limitation of the Usage-Based Theory

Helen Goodluck, a supporter of UG-based theory, argues that Tomasello misunderstands the term UG when he challenges it. Tomasello [5] claims that UG means forcing every language into one abstract mold. To be specific, the grammatical entities of non-European languages are forced to be categorized into the European one. However, Goodluck [15] argues that UG doesn't represent all the languages that share the equivalent structures and categories, and does not cause problems to usage-based theory since none of them believe that input plays a redundant role in L1 acquisition. For example, English and German are not the same at all. While they are both West Germanic language, one of the Indo-European languages, English belongs to Anglo-Frisian, and German is a member of Netherlandic-German [16]. What's more, their structures are not exactly the same. For instance, children who learn English and German as L1 will hear a sentence with the following word orders:

English: I can help you.
German: Ich kann dir helfen. (In literal: I can you help.)

"Modal verbs modify the meaning of a sentence." [17] There's a modal verb "can" /"kann" in both sentences, which cannot stand on their own as an auxiliary verb, so there must be a second verb to stand it. This is the principle. In German, the second, dependent verb always comes at the end of the sentences, which is the parameter. In conclusion, Tomasello has comprehended the UG in a wrong way, as Goodluck [15] states, that means it is inadequate to use the usage-based theory to challenge UG-based theory.

In conclusion, usage-based theory is a very extraordinary theory in the world that so many scholars would like to use it to challenge the innate-UG theory. Nonetheless, whether it is appropriate to challenge the innate-UG theory remains controversial because Tomasello misunderstood the term UG.

4. First Language Acquisition in the Modern Times

In the twentieth century, the field of linguistics had been revolutionized. The theories that came from two very different approaches in viewing grammar marked the beginning of modern linguistics. "Grammars, then, could be viewed as seeing the language as knowledge of either primarily syntagmatic relations among linguistic constituents or predominantly paradigmatic relations among linguistic items [18]". The former view of Grammar gave birth to Chomsky's universal grammar, while the latter gave birth to Halliday's systemic functional approach. The birth of Chomsky's generative transformable grammar, is later known as universal grammar, and Halliday's systemic functional approach changed the way people perceive the field of linguistics.

4.1 Introduction to Universal Grammar

Noam Chomsky, a professor at the Massachusett Institute of Technology, revolutionized modern linguistics by the publication of his idea of a universal grammar. Similar to what Plato had imagined in the fourth century BCE, he came up with the idea of universal grammar. Chomsky's universal grammar suggests that there is some "innate knowledge" that infants possess when they were born, which is helping the infants to learn their first language. This "innate knowledge" is similar to the "innate idea" that Plato had set forth, as they both suggest that infants learn their first language with the help of an innate resource, rather than the usage of the language.

Another important aspect of universal grammar suggests that there are common grounds between different languages in terms of grammar. If there is no common ground between different languages, universal grammar would not have existed. This is why Chomsky and his supporters claim that "children (at least) come to the task of acquiring a specific language already possessing general knowledge of what all languages have in common" [7].

According to Chomsky [7], there are two concepts that are of central importance to universal grammar:

(1) The speaker/hearers' basic knowledge of a language, or linguistic competence, is what contributes to the acquisition of a language. This is different from how the speakers use the languages in specific different instances, or linguistic performance [7].

(2) The innate knowledge of languages goes beyond what infants can get from simply hearing the language being used by the people around them. This is described as "the logical problem of learning", or the "poverty of the stimulus argument" [7].

These two concepts are essential for universal grammar due to the fact that universal grammar is based on these two concepts -- without them, universal grammar will not make sense.

4.2 Introduction to Halliday's Systemic Functional Linguistics

Challenging to Chomsky's UG theory, Halliday develops the famous Systemic Functional Linguistics (SFL). Halliday [19] suggests that "Language is a resource for making meanings – a semogenic system, with the process which instantiate the system in the form of text (spoken and written discourse)." It shows that language is one of the most effective methods for individuals to express their meanings in sound and writing. Halliday [20] also suggests that meanings are encoded in wordings: grammatical sequences, including lexical and grammatical items.

Wordings is a very abstract piece of code because people cannot really sense them visually or aurally; it is re-coded in the form of text. Hence the relationship is mainly not entirely arbitrary [20]. For example, there's an adjective word in English called heavy while it's called schwer in German and "重" in Chinese, but the natural relation of these sounds to the code or to the characteristic of something that people don't have enough strength to carry doesn't exist. Especially in Chinese, the pronunciation of word "重" is "zhòng", which shares the same pronunciation with other Chinese words like "众", "种", "中" that has nothing to do with the meaning of "heavy".

Halliday believes that grammar is "naturally" related to meaning. For infants, there's no grammar in their protolanguage, which is only making sounds and gestures to express their meanings [20]. In other words, infants have no capacity to use the sentences into expressions with words and grammar because they haven't learnt any language until their families teach them. However, when they are one year old, the protolanguage will be replaced by three-level systems: the meanings are encoded into the wording and then recoded into expression [20]. Halliday [19]

also explains this phenomenon: In the first year, the infants will begin to learn their first language earnestly, and construe their experiences by using their mother tongues and transform them into meanings. This transformation is also achieved by grammar. It is a process of an infant acquiring its first language from non-grammatical to systemic functional.

As a member of the editorial board of the Halliday's book The Language of Science in simplified Chinese edition, professor Yang Xinzhang concludes about three stages in the growth of children aged one and upwards according to Halliday's theory. Yang [21] concludes that Halliday divides the development of children into three stages: generalization, abstractness, and metaphor. In the first stage, children will construe their experiences into meanings. In the rest stages children will be capable of construing them in a more and more theoretical way. When the children are about five years old, they will be sent to school to learn a new and alternative form of their language – written language. Therefore, writing could be regarded as a whole new medium for the expression of children. That means, the children have the ability to cope with abstract categories and be ready to explore the new knowledge field [19].

4.3 Comparing Chomsky's UG-theory and Halliday's SFL theory

In general, according to Halliday's theories, infants are not born with innate ideas like UG, so they only have their protolanguages. Then as children develop, they acquire the native language gradually, the development relates to the society, children's family and schools, and so on. However, both SFL and UG have some overlaps to some extent. For instance, both of them pay attention to experiences in acquiring the first language. The UG-based theory believes that "The initial state changes under the triggering and shaping effect of experience [22]", and Halliday suggests that children can transform experience into meanings. Therefore, we believe that their works are both meaningful for contributing to the linguistics field and promoting the academic development in linguistics. Although they look different, they are, to some extent, complementary. However, we could not find any studies about FLA in a multilingual society and whether the innate ideas exist in mentally disabled children. This could be their future research direction.

5. Conclusion

This paper reviews four main theories in First Language Acquisition (FLA), including the theories from Plato, Tomasells, Chomsky, and Halliday. First of all, Plato believes that infants are born with innate knowledge, which is very useful for them to acquire the first language. However, Aristoteles holds a different view that infants are born in a blank stage without any knowledge that is helpful to their FLA. Secondly, Tomasello holds that in FLA, children form their linguistic competence by using their language in a meaningful interaction. Additionally, Chomsky suggests that infants are born with UG, the initial stage for children's FLA. In the end, Halliday holds a different opinion that infants have no grammar when they were born, and don't start to learn their first language in earnestness until they are one year old. This review would be helpful to those researchers, linguistic teachers, and students who are interested in FLA. Especially when they are interested in acquiring knowledge from the different main ideas of the theories in FLA, this paper clearly shows how do children acquire their first languages. However, there are still some questions that haven't been discussed. For example, what would the child FLA be if a child is in a bilingual or even trilingual society? How do children with a mental disability acquire their first language? Therefore, this paper would be helpful for those researches of FLA in monolingual society.

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