The Basic Assumptions on Language Acquisition from Perspectives of Cognitive, Generative-Transformational, and Structural Linguistics: An Overview

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Abstract

Language acquisition is a varied field, and there is an ocean of approaches from which one can investigate first/second language acquisition. These approaches root in different fields, basically linguistics. As for linguistics, research in language acquisition ranges from structural and generative-transformational to cognitive linguistics. While in contrast with each other in main respects theoretically, and, critically speaking, each having its own pitfalls, they have common methodological applications. This article aims at scrutinizing structural, generative-transformational, and cognitive linguistics in relation with language acquisition and providing support for such a claim that not only they are not totally mutually exclusive and in contrast with each other, but they rather share the same objectives in language acquisition path concerning innate syntactic knowledge, usage-based, and word grammar (WG).

Keywords: Structural linguistics, generative-transformational linguistics, cognitive linguistics, language acquisition, language teaching.

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1. Introduction

As the study of language acquisition takes into account the way 'language' is acquired, it is in close relation with linguistics, or the study of language. Linguistics is, in fact, only one of a number of academic disciplines relevant to language learning; others include psychology, education, and sociology. However, it is the influence of linguistics on language acquisition which seems to be the most influential in the twentieth and twenty-first centuries.

Early linguistics goes back to 1915 with Ferdinand de Saussure's Course in General Linguistics where he considered linguistics as a branch of semiotics, the study of signs. He argued that the relationship between a linguistic unit (signifier) and its meaning (signified) is arbitrary. In addition, the relationship is determined by its place in the synchronic or present system rather than by any resemblance between signifier and signified or by their diachronic or developmental history. The assumption was that the central core of language learning is the acquisition of knowledge of phonology, lexis, and grammar (Johnson and Johnson, 1999).

Later, Leonard Bloomfield and Charles Fries emphasized speech, and during 1930s to 1950s their structural linguistics was the accepted theory of linguistics. Structural linguistics studied a linguistic system which focused on the place and distribution of units with little reference to their meaning. Accepting behaviorism as a theory of learning, structural linguists saw learning as the acquisition of structural patterns through habit formation. On the contrary, Chomsky's first book Syntactic structures (1957) is a reference to the first line of thinking concerned with grammatical description. In Chomsky's generative transformational theory, the idea

of the mental representation and acquisition of language is different and separate from that of other types of knowledge and is determined by innate, genetically inherited elements.

In the 1970s, the next line of thought, Cognitive Linguistics, had its basis in the relation of language and mind and in fact, it had no account on the explanations of linguistic patterns through structural properties internal and specific to language. This brought a new line of research to language acquisition. It examined the relation of language structure to cognitive principles and mechanisms not specific to language including pragmatic and interactional principles.

Taking a critical glance at structural, generative-transformational, and cognitive linguistics, this paper aims at bringing all the three into a compromise on language acquisition despite the existing serious contrasts which have set them apart for many years.

2. Literature Review

2.1 Structural grammar

Structural Grammar describes language grammar based on the analysis of the structure of sentences. In other words, any grammar in which makes an attempt to describe the structure of sentences is structural grammar. During the 1950s, this kind of grammar was characterized by substitution. The result of this structural grammar later dived into transformational grammar.

From the early 1930s to the late 1950s, the most popular school of linguistics was the structural one associated with Bloomfield. He argued that language has a structure. His view was restricted to the fact that language is actually composed of morphemes in sequence. Both Fries and Bloomfield considered the traditional grammar as belonging to a pre-scientific era, and they were

concerned about replacing it by a grammar worked on by scientific means. Fries tried to put out of his mind the notions that he had borrowed from conventional grammar, and considered the spoken language primarily; therefore, he decided to collect samples of it. He did so in order to describe language not as it is prescribed, but as it ought to be. As such, he recorded hours of telephone conversations to allot words of the same parts of speech in the same positions in English sentences. This was a new method of classification which comprised meaning and function. For finding the relation between words and their positions, he substituted different words in each of the positions. Then, he gave the substitution to the native speakers to judge and say if it is the same or different from the original sentence. The words which finally could be substituted formed four word classes as class I, II, III, and IV similar to the traditional categories Nouns, Verbs, Adjectives and Adverbs. But his classification was different from the previous one both in context and conception. He then found fifteen groups of other classes known as 'function words', and the concepts of 'form' and 'function' were considered important.

This process of substitution has extensively been used by many modern investigators trying to show that a sentence consists of a sequence of words which represent a class. Fries' overlooking the conventional categories have been abandoned, yet the terms Noun, Adjective, Adverb and Verb are still frequently being used. There are two limitations for structural grammar. One is that structuralism ignores linguistic universals, meaning, and native speaker's competence in generating infinite number of sentences from a finite set of items. The second limitation is that it takes into account a part of language, its inventory of words, lexical categories not its whole.

2.2 Generative grammar

Generative grammar refers to a particular approach to the study of syntax. Its major basis is on giving a set of rules that can predict which word combinations will form grammatical sentences. Generative grammar roots in Noam Chomsky's attempts beginning in the late 1950s. The first version of his theory was called transformational grammar. There are a number of competing versions of generative grammar currently being noticed in linguistics, but Chomsky's last theory is known as Minimalist Program. Chomsky has argued that many of the properties of generative grammar arise from an 'innate' universal grammar. He says that grammar is not the result of communicative function and not simply learned from the environment and the poverty of the stimulus. Most versions of generative grammar characterize the grammaticality of sentences. The rules of such grammar typically function as a discrete (yes-or-no) grammaticality prediction (Tatum, 2009).

Generative grammar has been following a line of development for many years and therefore has gone through many changes in the types of rules and representations that are used to predict grammaticality. Various stages in the development of the theory include Standard Theory (1957-1965) which corresponds to the original model of a generative grammar has its core in a distinction between two representations of a sentence, which are normally called deep and surface structure. The deep and surface structure are considered to be linked to each other by transformational grammar. The next version comes as the Extended Standard Theory (1965-1973) was formed to regard language features as having syntactic constraints, and Chomsky later proposed phrase structures (X-bar theory); the development of generative theory, then, was revised in the form of Revised Extended Standard Theory (1973-1976) which imposes restrictions upon X-bar theory, particularly on Move α and COMP; later an alternative model of

syntax, that is, Relational grammar (1975-1990) was formulated based on the idea that notions like Subject, Direct Object, and Indirect Object play an important role in grammar; Government and Binding/Principles and Parameters theory (1981-1990) appeared on the basis of the assumption that language consists of a set of principles common to all languages and parameters which distinguish languages from each other. In fact based on Principles and Parameters Theory, the commonality and universality of all languages on one hand and language variations on the other hand can be justified. Minimalist Program (1990-present) is considered to be the latest proposed development in generative theory of language in which simplicity in description is taken into account.

As Johnson (2007) put it, transformational grammar can also be referred to as an approach to grammar use in communications where analytical processes are done to get the word meaning. From this perspective, transformational grammar or generative grammar goes beyond the process of structural grammar. Along with sentence structure, transformational grammar, also referred to as TG grammar will also attempt to explore the thought lying behind the words. It attempts to discover logic the deeper meanings of the structure of sentences and to analyze the surface and underlying intent of the words used. In fact, the use of transformational grammar can imply comprehending the grouping of words within the context, instead of focusing on the actual structure of words.

2.3 Cognitive linguistics

During the 1990s, cognitive linguistics became widely recognized as an important field of linguistics, pioneered by Lakoff, Langacker, and Talmy. It sees language as embedded in the overall cognitive capabilities of human beings. For many cognitive linguists, the main interest in the field is finding a

better-grounded approach to theoretical assumptions for syntactic and semantic theory other than what generative linguistics provides (Kemmer, 2007).

According to the Wikipedia, cognitive linguistics refers to a branch of linguistics that takes into account language creation, learning and usage by reference to human cognition. It is characterized by accepting three positions. First, it denies that there is an autonomous language faculty in the mind. Second, it understands grammar in terms of conceptualization, and third, it claims that knowledge of language arises out of language use. In contrast to Chomsky's idea of modular mind, the mind does not have a module for language acquisition that is unique and autonomous; it is in contrast with generative grammar. Even though it does not deny that part of the human linguistic ability is innate, it denies that it is separate from the rest of cognition. So, knowledge of linguistics, that is, phonemes, morphemes and syntax, is conceptual in nature. It argues that the storage and retrieval of linguistic data is not different from the storage and retrieval of other kinds of knowledge, and use of language in understanding employs similar cognitive abilities as used in other non-linguistic tasks.

According to Robinson and Ellis (2008), cognitive linguistics is about language, cognition, and communication. They argue that it has many of the assumptions of functional linguistics in common, which sees the processing conditions of language performance, and the communicative goals and intentions of language users as shaping influences on language structure, but it differs from it in that cognitive linguistics seeks to go beyond functional explanations of linguistic form. It explains the interfaces of linguistic representation which can be used to have communicative effect in producing utterances with other aspects of language. Cognitive linguistics holds that language is learned from usage, and this assumption corresponds investigations of language usage and language processing.

According to Langacker (1999), compared to other approaches, cognitive linguistics offers an account of language structures that is more comprehensible, revealing and descriptively adequate. It seems a field which has looked through different branches of linguistics and has taken those reasonable aspects in relation to language acquisition under an umbrella term 'cognitive linguistics'. It shares features with not only structural but also generative-transformational linguistics which in fact seem to be two extremes of linguistics continuum.

2.4 The relationship between language acquisition and three schools of linguistics

In order to make the three schools of thought, i.e. structuralism, generative transformational grammar, and cognitive linguistics, comparable regarding language acquisition, we look at the phenomena from innate syntactic knowledge, word grammar, usage-based grammar, and language transfer perspectives.

2.5 Innate syntactic knowledge

Structural theory of language did not account for innate syntactic knowledge and was not directly concerned with acquisition problem. Its main aim was to provide sets of structures and language samples, and give them proper collocations in the theory of grammar. On the other hand, generative grammar is concerned with language acquisition. Many linguists feel that in L1 acquisition, there is an innate component, an inborn knowledge of language, which is genetically transmitted. The main difference between structuralism and generative grammar was the emphasis of the latter on language creativity, language complexity, and acquisition problem. Whereas classical structuralism was not concerned with grammar as mental representation of language, generative grammar aimed at building a simple system of rules which would define the grammatical sentences of the language. The point of departure from structuralism is the element of

surface and deep levels of grammatical structure. What related deep and surface structures were transformations.

Every child is provided with a set of principles which enables him to acquire any specific language. The leading idea of generative grammar is that Universal Grammar (UG) plays a role in both first and second language acquisition. Gregg (1990) remarked that "a linguistic theory of the kind perhaps best exemplified by Chomskyan generative grammar could give us insights into language acquisition not available from other linguistic theories".

Regarding cognitive linguistics, one of the core questions is whether human language relies on innate syntactic knowledge. One influential view is that at least some aspects of syntax must be innate, since the child possesses syntactic knowledge that could not otherwise have been learned from his impoverished linguistic input (Pinker, 1989). Lidz, Waxman, and Freedman (2003) had an empirical investigation of young children's syntactic knowledge and linguistic input. They concluded that specific aspects of child's knowledge are not learnable from the input, and therefore must be innate.To sum up with innate syntactic knowledge, structural grammar only takes into account the observable linguistic data and makes no claims regarding innateness. On the other hand, cognitive linguistics and generative grammar are on the basis of the idea that at least a part of human knowledge of structure of the language is innate and unlearnable form the environment.

2.6 Word grammar

Word grammar (WG) was developed by Hudson in 1980s. It was considered as a model of syntax whose most distinctive feature is its use of dependency grammar, an approach to syntax based on which the sentence structure is

almost entirely contained in the information about the individual words, and syntax is the primary principle for word combinations. The central syntactic relation is that of dependency between words. Thus, so far as to this point, word grammar confirms the principles of structuralism.

Another claim made by proponents of word grammar is that statements about words and their properties form a complex network of propositions. One of the main points of the network view is the possibility of analyzing language in the same way as other kinds of knowledge is analyzed. In this respect, word grammar is an example of cognitive linguistics, which models language as part of general knowledge not a specific mental faculty.

While word grammar has common grounds with structuralism and cognitive linguistics, with the first in its focus on language structure and syntax and the relationship among words, and with the latter in considering the knowledge of language as a part of the whole knowledge in the mind of an individual, it is in contrast with Chomsky's notion of nativism and generative grammar as the basis for his claim was that even though language knowledge is innate and generative, human mind is modular and language module is separate from others.

Regarding language acquisition, according to Hudson (2007), as in word grammar there are several different mechanisms for including variation within this network analysis, and separating different languages including first and second language in a network is easily done. The main point for language acquisition in word grammar is that it should be viewed as a body of knowledge to be learned and taught by experience. According to cognitive linguistics and word grammar, language is a cognitive network of units, and that vocabulary and language structure can be acquired within networks. This model operates on the assumption that a new language element is strengthened by its addition to the already stored ones.

As for word grammar, both cognitive linguistics and structural grammar put a special emphasis on language structure and the dependency and order according to which structures are organized within a sentence. Generative grammar, on the other hand, makes no claims about syntactic organization, but claims that every sentence should be analyzed based on both deep and surface structure.

2.7 Usage-based grammar

Usage-based theories of language recognize the impact of usage on the cognitive representation of language (Langacker, 2000; Bybee, 2006).Based on this theory, grammar is viewed as the cognitive organization of one's experience with language. When users of language experience elements of language use, they categorize them at different degrees of abstractness. It creates a vast network of associations that range over what was traditionally known as only grammar and lexicon. The network is affected by repetition, and research has shown that frequency of occurrence of linguistic units has an impact on cognitive representations. The final effect of frequency will be autonomy in language acquisition. Usage-based theory can predict that with sufficient input and practice, any syntactic pattern can be acquired.

Another linguistic phenomenon that is based on usage-based grammar is the process of grammaticalization in which new grammatical morphemes within grammatical constructions are developed out of lexical items (Hopper and Traugott, 2003). This phenomenon helps understanding the ranges of variation that are seen in meaning and form and reasons why languages have grammar. This view in fact emphasizes that lexical items appear first in the language.

As usage-based theory looks at linguistic knowledge as a set of automatized patterns, the first language can be seen as both a facilitator and a hindrance to second language acquisition. To the extent that some structures are similar in first and second language, the L1 constructions can serve as the basis of L2 constructions, the only difference would be the change in particular lexical items.

Comparing and contrasting the three schools of thought in linguistics, it is concluded that the similarity between cognitive linguistics and structural grammar with reference to usage-based theory is that both emphasize the role of repetition and frequency of use, and exposure. Although structuralism has nothing to say about language acquisition, it shares views with behaviorism and is one of the pillars of Audiolingual method of language teaching in which repetition and practicing are the major activities language learners are involved in.

The major difference between cognitive linguistics and generative grammar with reference to usage-based grammar is that the first does not solely rely on innateness to explain linguistic categories but rather proposes that grammar can be explained on the basis of human abilities of repetition and categorization which lead to autonomy.

2.8 Language transfer

The concept of language transfer, also known as L1 interference and linguistic interference, was introduced to linguistics right after behaviorism found its way into the field. Behaviorism attempted to explain all learning behavior in term of habit formation. Behaviorism viewed that first or native language habits influence the acquisition of the second/foreign language habits. Fries (1945), a structuralist, was one of the foremost researchers who advocated that comparison between a learner's native and foreign language should be

made. Intending to make a precise definition of transfer, Regier and Gahl (2004) suggested that the term be restricted to "those processes that lead to the incorporation of elements from one language to another". Language transfer was seen important in second language acquisition when Lado's (1957) Contrastive Analysis Hypothesis was the dominant approach. According to him, the productive and receptive skills of L2 speakers are influenced by their own L1 patterns. The claims made by Lado and Fries about the relationship between the linguistic aspects of first and second language faced serious challenges in the late 1960s as they had both taken a structural view toward language. The opposition was based on the idea that not only language structures but the meanings conveyed through those elements of language should be taken into account (Wu, 2006).Based on generative-transformational grammar, Chomsky (1965) argued that children are born with a specific and unique kind of knowledge which equips them for language. Duley and Burt (1974) stated that child first and second language acquisition are similar, which is known as 'L1=L2 Hypothesis'. They developed what they called 'Creative Construction Hypothesis', which accounted for the process in which children gradually construct rules, guided by universal innate mechanisms. On this basis, Dulay, Burt, and Krashen (1982) claimed that SLA is essentially no different from child native language acquisition. So, the function of transfer was played down in foreign language teaching.

Despite oppositions to transfer based on generative transformational grammar, some refinements were made with the emergence of the cognitive period in the late 1970s and early 1980s. Wu (2006) claimed that transfer is a strategy which operates within a general process of hypothesis construction and testing. The use of L1 in L2 learning came to be seen as an element of learning and communicative strategies. Therefore, once again transfer gained

attention through cognitive linguistics.

To cut it short, structural linguistics and cognitive linguistics accept the role of language transfer as being either positive or negative in language acquisition with emphasis on exposure to mother tongue, but generative grammar denies the role of transfer claiming that, based on the poverty of the stimulus, input is too weak to affect language acquisition.

3. Theoretical and Practical Implications in Language Teaching

Based on the above-mentioned discussions regarding the similarities and differences in structural, generative-transformational, and cognitive linguistics, the similar theoretical assumptions can be made about the three schools of thought at the service of language teaching practice.

The first application of the philosophies behind each of these three branches of linguistics in teaching is the importance of structure. It can be stated what Ellis (1997) referred to as the zero option of no form-focused instruction at all corresponds to Krashen's input hypothesis. Within the today's communicative framework, there is a range of emphasis on language forms and structure from explicit treatment of rules to conscious-raising techniques. Therefore, the role of structure is not deemphasized but paid attention to instead in today's language classes. Teachers are assumed to spend enough time on the organizational components of language and the systematic rules that govern the structure.

The second implication of the theories of structural, generative-transformational, and cognitive linguistics is the role of innate genetically determined knowledge on one hand and the impact of experience and input on the other hand, in the acquisition and development of language knowledge. Teachers well-informed of these three fields of linguistics will neither ignore the role of what old Mother

Nature has put within every individual regarding the innate knowledge of language nor disregard the importance of experience, exposure, and input.

The last, but not by any means the least, is the concept of language transfer. Some aspects of first language are transferred into the second language in the process of language development. Thus, teachers need to treat different language learners with different native languages differently in their classes as one's first language might facilitate the second language acquisition and another's might debilitate it.

All in all, as far as language teaching is concerned, accepting one of these three branches of linguistics does not mean denying the others at all. Rather, they are all at the disposal of language teachers to guide the learners to acquire the language, which is the ultimate goal.

4. Final Remarks and Conclusion

This article was an attempt to shed light on the fact that linguistic theories on language acquisition are not exclusive. It does not consider linguistics as a continuum and put any of the theories on a special point of the continuum using structural and generative linguistics as the two extremes. As it was explained, considering the four major perspectives--innate syntactic knowledge, word grammar, usage-based grammar, and language transfer-all the three approaches to linguistics described share common applications in language teaching even though different and sometimes in total contrast with each other theoretically. The proponents of generative grammar and cognitive linguistics support that language acquirers enjoy an innate syntactic knowledge which helps them acquire those aspects of language which have not been received through input and genetically exist in their mind. Concerning word grammar, structural and cognitive linguists believe that structure is the major element of language, and focus on the

relationship between the syntactic elements. According to word grammar, cognitive linguists accept that the knowledge of language to be acquired is a part of the whole knowledge human beings are to process in their minds, but generative linguists accepting the role of mind in language acquisition stand on the idea that linguistic knowledge is separate from other types of knowledge an individual acquires.

Two other theories discussed in this article were usage-based grammar and language transfer. Cognitive linguists and structuralists focus on the frequency of occurrence of input and repetition with the second group emphasizing the more an individual is exposed to language, the better it is acquired, generative linguists agree upon the idea that input is too weak to help a language learner acquire a language. As for language transfer, while structuralists and cognitive linguists accept the facilitative and debilitative roles that first language might have on the acquisition of the second language, generative linguists deny the role of transfer on the whole stating that all languages share common features based on a Universal Grammar and have minor differences from one language to another.

In conclusion, all schools of thought in linguistics come to some sort of compromise when it comes to language acquisition. The issue to consider is from which perspective to look at the phenomenon.

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