

# An Inquiry into Universal Grammar

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## *Abstract*

*Noam Chomsky revolutionized the study of linguistics when his book *Syntactic Structures* was published in 1957. This book gave birth to the idea of generative grammar, which is a theory about language structure. This grammar made a distinction between deep structure and surface structure, something like what Saussure called *langue* and *parole*. Chomsky claimed that language structure is innate or genetically inherited. Consequently, structure is to be found inside the organism and the hypothesis is that we learn language because we are born with a Universal Grammar (hereafter referred as UG) in our head. This study aims to find out if UG is real or just an invention. In order to find the strengths and weaknesses with such a controversial statement, this paper will compare Chomsky's theories when it comes to language acquisition to the behaviorists' and the modern cognitive linguistics' approach to the problem. But before the comparison this paper will explain in detail about the shift of focus in the approach to problems of language. Then, it will present an overview of how language and, in particular, language acquisition was explained by the structuralists and by Chomsky.*

**Keywords:** *Universal Grammar, Generative Grammar, Language Structure, Cognitive Linguistics, Innateness Hypothesis*

## Introduction

### A Linguistic Paradigm Shift

The general shift of focus is sometimes called the cognitive revolution of the 1950s and was from behavior, or the products of behavior, to states of the mind. This shift was highly influential because today the study of language is important in the study of the human mind. And as a result, linguistics is seen as a branch of cognitive psychology. The shift of focus can also be described as a shift of focus from what Chomsky calls externalized language (E-language) to internalized language (I-language). Whereas, the externalized language was the center of focus for the American structuralists and behaviorists, the internalized language is the object of linguistic study for Chomsky. An externalized language is a language viewed independently of the mind and is to Chomsky thus not real. An internalized language, on the other hand, is some element of the mind of a person and thus an aspect of the physical world. Grammar is defined as the mental grammar in your head, the UG. Furthermore, internalized language is tacit knowledge, which is defined as “knowledge which people have but of which they are unable to give any account” (Matthews, 2007, p. 400). Besides, Chomsky explains that when it comes to linguistic structure “It is tacitly presumed that the intelligent reader will use his “linguistic intuition” -- his latent, unconscious knowledge of universal grammar – to determine the regular structures” (Chomsky, 2006, p. 112).

## **The Behaviorists' and the Modern Cognitive Linguistics**

Bloomfield and the American structuralists concentrated themselves on directly observable linguistic behavior and abstained from abstract theorizing. They even went so far as to reject the very existence of minds. Bloomfield, who was influenced by behaviorism, explained language acquisition in terms of imitation and reinforcement. The brain was considered to be a *tabula rasa*, which means that it is completely empty. Therefore, in order to learn a language children were dependent on the environment and had to imitate what the grown-ups were saying. In other words, the environment was considered the locus of language. Language was considered a habit structure. Bloomfield stated, for instance, that when a person utters a speech form that he has not heard, he does this on the analogy of similar forms that he has heard. As a consequence, this knowledge of language must develop slowly on the basis of repetition and training. This way of language acquisition has been called a stimulus-response model. Also, the American psychologist B. F. Skinner attempted to interpret language acquisition strictly in terms of behaviorism. He claimed, for instance, that first-language acquisition is an essentially passive affair.

## **Discussion**

### **The Chomskian Hypothesis**

Chomsky disagrees with the behaviorists' and the modern cognitive linguistics. In his view, "there is no hope in the study of the "control" of human behavior by stimulus conditions, schedules of reinforcement, establishment of habit structures, patterns of behavior, and so on" (Chomsky, 2006, p. 100). He claims, on the contrary, that children are born with a UG and thus they know already at birth what human languages are like. Therefore, they only need to acquire the details of the specific language they will be learning. So he wanted to abandon behaviorism and embrace mentalism instead. Mentalism is an approach to linguistics which believes that the mind can be invoked in scientific investigation and even be made the object of study itself. UG is defined as "a theory of linguistic structure that aims to discover the framework of principles and elements common to attainable human languages" (Chomsky, 2008, p. 3). It can also be regarded as a characterization of what Chomsky believes to be a genetically determined language faculty. Or, in his own terms, it is "a theory of the "initial state" of the language faculty, prior to any linguistic experience" (Chomsky, 2008, pp. 3–4). This makes the study of UG "a study of the nature of human intellectual capacities" (Chomsky, 2006, p. 24). As we can see from these definitions, it is what Chomsky calls the language faculty which underlies the search for the UG. This is also what forms the basis of the belief that language structure is innate, called the innateness hypothesis. This hypothesis implies that our language faculty must in large measure reside in our genes. It is thus a more specific version of the genetic hypothesis of language. The stimulus-response model has been criticized also by psycholinguists.

Psycholinguistics, which is the study of the relationship between language and mind, has confirmed that language acquisition is not a system of habits and analogies. An important part of this field of study is language processing, and it has been discovered that all healthy children go through the same stages of acquisition. First you have the cooing stage, then cooing gives way to babbling,

then comes the one-word stage and finally the two-word stage. After these initial stages children progress with different rapidity and they seem to know what rules to apply in order to construct grammatically correct sentences. This shows that the theory about imitation and reinforcement is wrong and at the same time supports Chomsky's theory of a UG. Children do not produce random approximation to the way grown-ups speak and they do not make random errors. This implies that the adults' attempt to correct children's utterances have no effect since the child will go through the stages of acquisition at his or her pace. The child is thus constructing the language his or herself and language acquisition has to be an active process.

## The Tests

In order to test Chomsky's innateness hypothesis and to prove that language acquisition is an active process, we can observe what children do when they have to learn language in unusual circumstances. One of the arguments which supports the innateness hypothesis, and thus the UG, is the fact that there seems to be no difference between the acquisition of spoken language and sign language. An example of this is the fact that if a deaf child's parents are not completely fluent in sign language; the child still learns the language perfectly. Besides, "if the parents cannot use sign language at all, the deaf child will still seize upon *any* gestures made by the parents and develop those gestures *into its own sign language!*"(Trask, *Language: The Basics*, 176). This shows that they do this even without reinforcement. Another example to support Chomsky's theories is taken from Nicaragua, where deaf children were shut away in isolation without the possibility to meet other deaf children under the Somoza regime. They grew up without being able to communicate, but after the revolution in 1979 the new government brought the deaf children together. The children then began to communicate with one another by gestures. They began to construct signs for things and then they introduced grammar. This proves once again that children actively construct their language. The Canadian psycholinguist Steven Pinker has named this determination to acquire language the language instinct. The existence of this instinct in children supports the innateness hypothesis and the existence of a UG.

A second indication towards the correctness of Chomsky's theories is the fact that when adults do not have a language in common to communicate in, they often create a pidgin. This is a basic system of communication with no fixed vocabulary and no fixed grammar. When the children of these grownups play together, they turn the pidgin into a Creole. This is a real language with a fixed grammatical system including verb tenses subordinate clauses and a fixed word order. The fact that children are able to create such a complex language structure and not their parents also indicates that to learn a language is a special faculty. The critical period hypothesis, which states that first-language acquisition is rapid in children but impossible in adults, supports this viewpoint.

The UG is also supported by the nature of certain genetically based disabilities. Children affected with the William syndrome, which is a syndrome that implies devastating damage to mental and cognitive processes, have the language faculty virtually intact. Besides, the disability called Specific Language Impairment (SLI) chiefly affects only linguistic behavior while other mental faculties are left unharmed. People with this disability do mistakes which normal school age children never

make. They can, for instance, produce a sentence like “*There’s a trains coming*” (Trask, 2004, p. 183). Based on this it looks like the language areas control only language and no other functions. The language faculty is thus independent of the other functions of the brain. These evidences justify that language is part of our genetic endowment. So, despite the fact that Chomsky’s innateness hypothesis remains controversial and is criticized by, for instance, the American psychologist Elizabeth Bates, there is evidence that he is right.

The fact that children never make certain types of errors is also an argument for the existence of a UG. There are sentences that every English speaker knows is impossible and no one will try to construct such sentences. Still, this constraint cannot be inferred from what the child hears. Chomsky saw that data available to the child from adult utterances seemed to be inadequate to explain the knowledge which the child eventually acquires. He concluded then that they had some intuitive knowledge. This indicates that knowledge cannot be considered a practical ability, and strengthens the genetically inherited Universal Grammar hypothesis. This theory also solved, according to Chomsky, what has been called Plato’s problem or the poverty of the stimulus. Plato had also seen that there was a gap between knowledge and experience. He consequently wondered why it was possible to know something that you had not been taught.

## **The Lacks**

Chomsky’s theories have also some weaknesses and cognitive linguistics developed because there was dissatisfaction with the dominant Chomskyan theories. A lot of people felt that “linguistic theory was becoming so abstract, and so far removed from people’s everyday experience of what language is and what it means to know and use a language, that a new approach was needed” (Taylor, 2002, p. 31). One weakness is that it is difficult to test his theories. Consequently, there is no proof that his theories are the correct ones. Besides, psycholinguistics has not found any indication that there is a specific area in the brain where there is a UG. One of the statements adherents of cognitive linguistics reacted to was the autonomy of the language faculty, which means that it is independent of general mental and cognitive abilities. Cognitive linguistics disagrees and believes, on the contrary, that language is best regarded as an integral part of cognition. We should therefore study language in light of what is known about the mind. The adherents of this approach to linguistics want to render the accounts of their studies “consonant with aspects of cognition which are well documented or self-evident, or at least highly plausible” (Taylor, 2002, p. 9). They deny that there is such a thing as a narrowly defined linguistic knowledge. To them, language acquisition is not different in kind from learning to judge size and distance. Some people also claim that to learn a first language is not different from learning, for instance, to drive a car. However, the critical period hypothesis rejects this and shows that language acquisition has to be different from learning to drive a car. Still, cognitive linguistics claims that there are continuities and common properties between language and other visual, aural, tactile and spatial development.

Also psychologist like Jean Piaget and Jerome Bruner have argued that our language faculty is not at all an individual and distinctive part of our biological inheritance, but merely one more manifestation of our general all-purpose cognitive abilities. Piaget is one of Chomsky’s most

distinguished critics and argued that there is no evidence for innate linguistic knowledge. He disagrees that children are born knowing what human languages are like and that the human species has evolved a language faculty from our ancestors which is built into our brains. Piaget believes, on the contrary, that children acquire language merely by using the same abilities they use to acquire other kinds of knowledge about the world. He supports thus the approach of the cognitive linguistics to the acquisition of language and rejects the existence of a UG.

Neuro-linguistics, which is the study of the relation between language and brain, is also preoccupied with how and where language is organized inside the brain. A French surgeon named Paul Broca identified an area of the brain which is called Broca's area. People who had suffered damage to this area of the brain had a particular language disorder called Broca's aphasia. Damage to Broca's area destroys grammatical structure and impairs the production of speech. The German neurologist Carl Wernicke identified another area of the brain where damage in this area will affect the comprehension of speech and access to vocabulary. Broca's area and Wernicke's area confirmed the reality of the localization of language in the brain.

This supports the innateness hypothesis. However, they also confirmed that there are several language areas. This refutes the theory that there is one specific area in the brain where there is a UG. Scanners have made it possible to monitor the brain. The PET (position emission tomography) scanner has, for instance, confirmed that the language areas exist and that language is located in the left hemisphere of the brain. The scanners have also shown that there are different parts of the brain that are active during speaking or reading. This confirms that different parts of the brain handle different aspects of language. "our language faculty our biological ability to use language --must be in some sense modular - that is, it cannot be a formless whole, but rather it must be divided up into a number of specialized subcomponents" (Trask, 2004, p. 156). Chomsky now agrees with this theory and believes that our language faculty must consist of a number of specialized and largely independent subcomponents which interact to produce our overall linguistic behavior. In other words he admits that there is an interaction of linguistic knowledge with other cognitive capacities. However, where he differs in viewpoint from cognitive linguistics is that he claims that language knowledge itself is a separate cognitive faculty which is independent of other mental capacities. Still, cognitive linguistics has shown that it links up with the rest of the brain in complex ways.

Chomsky and cognitive linguistics disagree also in the notions of performance and competence. An E-language can be compared to the notion of performance and an I-language to the notion of competence. In Chomsky's generative grammar he found it necessary to have a notion of competence that lies beyond the conceptual limits of behaviorist psychological theory. In his own words he states the following: "It seems clear that we must regard linguistic competence -- knowledge of a language -- as an abstract system underlying behavior" (Chomsky, 2006, p. 62). So this abstract linguistic competence should be the principal business of linguistic theory. Chomsky refers the errors that we make when we speak, like slips of the tongue, to the domain of performance. According to him, they largely result from non-linguistic causes and are not to be considered linguistic behavior. Cognitive linguistics finds the notion of competence too abstract and is more interested in aspects of performance. Furthermore, this approach to linguistics states that errors that a person make while speaking are not attributed to interference from non-linguistic

performance factors, but result from the dynamic aspects of language knowledge itself.

As we have seen cognitive linguistics agrees upon that there is a language faculty in the human brain but rejects that this language faculty has anything to do with a UG or a Language Acquisition Device (LAD), which was an earlier version of it. Chomsky claimed that children need this neurological structure in order to extract generalizations and construct suitable grammatical rules. In cognitive linguistics a language is not equated with such a device to generate grammatical sentences. Adherents of this linguistic approach believe that it is speakers who generate expressions, not the grammar. They claim that there are “continuities in humans’ physically embodied condition, with connections between perceptual and motor skills developed out of which language emerges and is distributed across the brain” (Trask, 2007, p. 133).

## Conclusion

If the UG is real or just an invention is difficult to give a conclusion to. There are many evidences which indicate that there is a UG, but at the same time there are good counter-evidences against it. Whether children are born with a distinctive and largely independent faculty for learning language or simply acquire a language in the same way they acquire other kinds of skills is thus still uncertain. Many linguists support Chomsky’s innateness hypothesis, but it seems to me that a lot of psychologists, and more and more linguists, support the theories of cognitive linguistics. Jean Piaget is perhaps the most prominent member of this group. However, what everyone agrees on today is the fact that there is a language faculty which is to be found in different areas of the brain. The question is then whether language knowledge is independent of general mental and cognitive abilities or not.

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