Language Acquisition: the Connection between the Innateness Hypothesis and the Idea of a Universal Grammar

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Abstract:

In linguistics, the Innateness Hypothesis is the claim that all children have, by virtue of a common biology, a 'Universal Grammar' that defines a space of possible human languages. Children explore this space, influenced by the environment, until they stabilize on grammars that are equivalent to those of adult speakers in the linguistic community.Hence, this is a critical study of the arguments for and against the hypothesis that human beings are born with an innate universal grammar, with some brief discussions of other theories which might account for language acquisition, namely behaviourist and cognitivist theories as well as the social interactionist theory.

1. Introduction

The issue whether language may be innate in humans and if there are any universal features shared by human languages have always been debated among the students of language. Linguists say that there are many qualities that are common to all the languages. They term these qualities as "language universals". Though languages spoken in different regions widely differ in many aspects there are some things in common among them. For example, all the languages have sounds, words, sentences, nouns, etc. . Now the question is that how come the languages are similar in these aspects? One theory is "mono genesis", in other words, all the languages have originated from the same ancient language. Well, there is no strong evidence to prove this idea, but at the same time we can't even blindly reject this idea. Another theory is that languages acquired these similarities as a result of the interaction among their speakers. But Noam Chomsky had come up with an entirely different and surprising explanation called" innateness hypothesis". All human languages, as Fernandez and Cairns (2011:10) have put it," are cut from the same mold: they are highly

similar in their organization and in the abilities they confer on the people who know them". They concede to say that "all human languages have a grammar and a lexicon ,which together allow the creation of an infinite set of sentences to convey any possible thought." According to Chomsky humans are born with innately hard wired language capabilities. The Chomskyan term " Language Acquisition Device (LAD)" refers to a property of the child's brain that endows it with a predisposition for acquiring language (Ibid). So, language acquisition is a nature of developmental process ; all children progress through similar milestones on a similar schedule (Ibid:99). So, human language is biologically based . Language is a fundamental aspect of human biology. In this paper ,I will try to critically study some of the arguments for and against innateness. Since the innateness hypothesis is closely connected with the Chomskyan paradigm, only this category will be further discussed in this paper.

2. Universal Grammar

There are two major approaches to language universals proposed by Noam Chomsky and Joseph Harold Greenberg, namely the Chomskyan and Greenbergian approach. Either in-depth studies of one or a few languages which is basically Chomsky's method, or wide-range typological comparisons of a large number of languages which is Greenberg's method.

Quite naturally, the two approaches have a tendency to generate different types of universal rules. Greenbergian rules are often on the form " If a language has the feature X, then it must also have the feature Y". Chomskyan rules are of a more abstract and structural character, and are claimed to be strictly universal than just tendencies.Chomsky himself has written many books on this topic, such as (Chomsky 1978; Chomsky 1982; Chomsky 1986).This presentation is however based not so much on Chomsky's own writings as on the introduction to his work written by Cook(Cook 1988).Chomsky defines universal grammar as" the system of principles, conditions and rules that are elements or properties of all human languages…the essence of human language" (Chomsky,1978). Radford (2004:3) speculates that" Chomsky's ultimate goal is to devise a theory of Universal Grammar/ UG which generalizes from the grammars of particular I- languages to the grammars of all possible natural (i.e. human) I- languages. So, when we study the grammatical competence of a native speaker of a language like English we are studying a cognitive system internalized within the brain/mind of native speakers of English(Ibid.).

Cook gives a few examples of rules that belong to this universal grammar. They are as follows:

Structure dependency. All language operations depend on understanding of the internal structure of a sentence, rather than on the number of elements involved. In other words, grammatical processes function primarily on structures in sentences, not on single words or sequences of words. This is probably the least controversial of all the proposed rules of universal grammar, being strongly supported both by all available data and by most people's linguistic intuition.

The head parameter.

Each phrase contains a "head" (chief word), and all phrases in a given language have the head in the same position. The head position is, however, different from language to language, which introduces the important concept of a parameter-governed rule. Unfortunately, it is often natural to find exceptions to this rule- for instance, in English the

head of a phrase always appears to the left of the complement ,yet the two English noun phrases " general election" and " secretary general" have the heads at opposite ends- weakening the case for including it in a universal grammar. Other languages exhibit an alternative order where the head appears to the right of its complement.

The projection principle.

The principle, as formulated in Government and Binding Theory, by which the range of syntactic elements with which a lexical unit combines can be 'projected from' a lexicon as restrictions on structures that contain it. For instance, *put* takes an object noun phrase and a locative phrase: *put* [*the book*] [*on the shelf*]. These requirements will be specified by its entry in a lexicon. So, by the projection principle, any syntactic structure in which *put* appears must, at whatever level of representation, include elements that satisfy them.

Just as a lexical unit restricts the structures that can contain it, so a structure itself is possible only if there are lexical units that allow it. For instance, the construction with an object and a locative (*put the book on the shelf*) exists precisely because there are verbs such as *put* that take it. Therefore specific constructions do not need to be distinguished independently of entries in the lexicon. This rule ensures that a verb gets the appropriate number ant type of objects.

3. The Innateness Hypothesis

Does a human being have any innate preconditions for acquiring language? This is a topic well discussed among linguists for many years. The most famous answer to this question is Noam Chomsky's. Chomsky has for many years promoted the belief that there are such innate preconditions. In Chomsky's words: "It seems to me that the relative suddenness, uniformity, and universality of language learning, the bewildering complexity of the resulting skills, and the subtlety and finesse with which they are exercised, all point to the conclusion that a primary and essential factor is the contribution of an organism with highly intricate and specific initial structure" (Chomsky 1962).

One of the main observations which led Chomsky to believe in an innate language device is the one that humans have a lot of knowledge despite fairly limited evidence. The other way around it is sometimes the same - humans might have surprisingly little knowledge despite a lot of evidence (Chomsky 1986:12). In both cases this leads to the question that why this is the case. To the first question, the one how anyone can know fairly much although he had little contact to the outside world, for instance, Chomsky adds another problem: the so-called "poverty of the stimulus". This problem is mainly what led Chomsky to his innateness hypothesis. To make up for the lack of stimulus, a human being must, according to Chomsky, have another mechanism of learning, specifically of acquiring language, than simply by stimulus from the outside. So Chomsky made the claim that a "child is born with an innate capacity for language development; that the human being is in some way pre-constructed towards the development of language; so when the child is exposed to language, certain language-structuring principles automatically commence to operate." (Crystal 1987: 31). This claim leads to another important part of Chomsky's Innateness Hypothesis, the one of a "Universal Grammar".

The main arguments for the innateness hypothesis are :

- Language acquisition would be difficult or even impossible without an innate grammar: " How do we come to have such rich and specific knowledge, or such intricate system of belief and understanding , when the evidence available to us is so meager?" (Chomsky, quoted in (Cook,1988))

- The mere existence of language universals supports the hypothesis that theses are innate.
- Essentially all humans have the ability to acquire language, but other animals do not.

4. Language Acquisition : some other theories

The innateness hypothesis is the most widely supported and is the most logical in explaining the acquisition of the complexity of a language, but it is not the only available explanation of language acquisition. Different hypotheses have been proposed at one time or another. Cruttenden(1979: 46) classifies them in four main models : Behaviourist, Innateness, Cognitive and Social interactionist. These models will be briefly discussed.

4.1 Behaviourist Theory

A major proponent of the idea that language depends largely on environment was the behaviorist B. F. Skinner (1957). He believed that language is acquired through principles of conditioning, including association, imitation, and reinforcement. According to this view, children learn words by associating sounds with objects, actions, and events. They also learn words and syntax by imitating others. Adults enable children to learn words and syntax by reinforcing correct speech.

Critics of this idea argue that a behaviorist explanation is inadequate. They maintain several arguments:

- Learning cannot account for the rapid rate at which children acquire language.
- There can be an infinite number of sentences in a language. All these sentences cannot be learned by imitation.
- Children make errors, such as overregularizing verbs. For example, a child may say *Ali hitted me*, incorrectly adding the usual past tense suffix *-ed* to *hit*. Errors like these can not result from imitation, since adults generally use correct verb forms.
- Children acquire language skills even though adults do not consistently correct their syntax.

Moreover, this model has difficulties accounting for many features of human language, such as understanding structure and meaning, and has not met with any enthusiasm among linguists : " Verbal behaviour is equated with rat behaviour …" (Chomsky,1959). Human behaviour is more complex than animal one.

4.2 Cognitive Theory

The name Piaget is closely connected with cognitive models as Chomsky with innateness. Piaget's detailed empirical studies of the cognitive development of children have been invaluable for our understanding of child psychology.Language acquisition for Piaget is a mental and emotional process. He linked the development of language in a child to the child's cognitive development. He believed that a child must have the understanding of a concept before he can verbalize it. For instance, if a child says, " This car is bigger than that one.", he must have the concept of size in his mind before commenting.

The computational models, typified by the "schemas" of Arbid and Hill (Arbid & Hill, 1988) can be regarded as a subclass of cognitive models. Cognition is also here the basis of language acquisition, but in a rather different sense; language does not automatically follow from cognitive development, but instead the child uses its capacity to deduce the rules of the language it hears. The innatists reject this task as impossible, and the impossibility of which they invoke as a proof of the necessity of the innateness hypothesis.

4.3 Social Interactionist Theory

The interactionist theory opines that language acquisition is a product of complex interaction of the child's linguistic environment and the child's internal mechanism (Lightbown & Spada 1999:22). Thus, modified verbal language, also called "motherese" is deemed to be crucial in language acquisition.The social interactionist model of language acquisition ,like the cognitive model, does not regard language as an independent system, but as subordinate to and dependent upon the child's development in other areas. According to this theory, children are social beings who acquire language in service of their needs to communicate. Language is regarded simply as means to an end, a tool developed by the child to solve its communicative needs.

5. Tests of the Innateness Hypothesis

If the idea of an innate grammar is to have any worth as a scientific hypothesis, it must be possible to conceive of experiments that could falsify it. The methodology used to investigate language acquisition has not always been too ethical and the experiments have been done under severe conditions.

A classical experiment in this area is the one done by the king Psammetchos (or Psamtik) an Egyptian pharaoh (7th century BCE), who handed over two children to a mute shepherd with the accompany of goats , without any contact to human language. When, after a long time, the king allowed the children to be examined in order to determine which, if any, language they would speak with each other. The children were reported to have uttered the word *bekos* ,which was identified as the Phrygian word for "bread." Phrygian (now long-extinct language). This would indeed be a critical test of any specific set of universal grammar principles. (Yule, 2010:2).

Experiments of this type have been repeated many times. There are a few tragic cases of single children growing up without contact with language, notably " Genie" whose case is

discussed at length in (de Villiers and de Villiers ,1978). These children do not develop language.

5.1 Monolingualism versus bilingualism

Another possible test of the idea of an innate grammar is the time it takes to acquire two languages with the time it takes for monolinguals to acquire their single language .

There exist a number of studies of rates of language acquisition in bilingual children. The variations between individual children are very large as is also the case for monolingual language acquisition .Bilingual children start speaking slightly later than monolinguals, but they still remain well within the degrees of variations for monolingual children .

Romaine(1989:34) discusses an aspect of bilingual acquisition, namely the pattern of acquisition "… bilingual children seem to pass through the same developmental milestones in much the same order and the same way in both their languages as monolinguals do in their respective languages,…". She takes this as evidence in favour of the innateness hypothesis, but the reasons for this are not evident. It seems to imply rather the language acquisition is either some kind of maturation process, or controlled by non-linguistic development, as in the cognitive models.

5.2 Pidgins and Creoles

The presence of creole languages is sometimes cited as further support for this theory. Creoles are languages that are developed and formed when different societies come together and are forced to devise their own system of communication. The system used by the original speakers is typically an inconsistent mix of vocabulary items known as a pidgin. As these speakers' children begin to acquire their first language, they use the pidgin input to effectively create their own original language, known as a creole. Unlike pidgins, creoles have native speakers and make use of a full grammar.

The idea of universal grammar is supported by creole languages because certain features are shared by virtually all of these languages. For example, their default point of reference in time (expressed by bare verb stems) is not the present moment, but the past. Using pre-verbal auxiliaries, they uniformly express tense, aspect, and mood. Negative concord occurs, but affects the verbal subject. Another similarity among creoles is that questions are created simply by changing the intonation of a declarative sentence, not its word order or content.

What makes pidgins and creoles interesting in this context is that the grammar of different pidgins evolved independently from different parent languages. This might be interpreted as echoes of the rules of universal grammar which come to the surface when a new language develops in this way.

5.3   Is it possible to acquire a language without an innate grammar?

Innatists such as (Hoekstra & Kooij 1988) spent much efforts to show examples of subtle grammatical judgements and asked rhetorically "How can a poor child possibly learn this grammatical rule from the available evidence ?" and concluded "It must be innate!". To begin with, many of the examples given are of judgements that require adult knowledge of language — no child of five will correctly handle all the examples of (Hoekstra & Kooij, 1988) — based on many years of complex high-level linguistic input. It is not at all obvious that the rules cannot have been deduced from the enormous volume of material that a young adult has encountered. Furthermore, it remains to be shown that the judgements given are actually based on Universal-Grammar rules, and not on language-specific idiosyncracies, in which latter case the whole argument falls.

A more interesting approach to this question of the necessity of an innate grammar is that of the computational models, as mentioned in section 4.2 above. If it could be explicitly demonstrated that basic principles of grammar could be deduced from the material available to a child, then the foundations of the innateness hypothesis would be demolished. (Arbib & Hill ,1988) are apparently making some progress in this direction.

5.4 Is language uniquely human?

Several experimenters have attempted to teach language to non-human apes with some measure of success (de Luce and Wilder, 1983). Chomsky (Chomsky,1978) denies that any progress is possible; Hoekstra and Kooij grudgingly admit that some progress has been made, but still claim that what the apes have learnt is not language. A vital feature of human language (recursivity) is still missing.

6. Conclusions

However, finding a solid answer to the problem of language acquisition is far from being over. No model, to my viewpoint, has given the absolute answer for the problem of language acquisition. Each model has its strength and pitfall. However, the Chomskyan model of LAD

Seems more reasonable, especially in the early stage of the child acquisition. Like any other human activities as " walking", language is a biological process; it is naturally developed. In other words, the child acquires that system as his/her brain develops.

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