

Cognitive Science and Language Acquisition

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Editorial

Cognitive science includes many related disciplines. Among them is language acquisition, which is my field. Language acquisition is concerned with how young children master their first language, as well as how adults and children acquire a second language.

It has been discovered over the last several decades that young children at birth possess many of the rules of grammar of human languages because of the innate nature of the language faculty [1,2]. These rules are common to all languages and are referred to as Universal Grammar. After birth, children begin to be exposed to the linguistic input from their caregivers, and the rules that comprise these grammatical principles are gradually triggered as the child matures. Thus, every child could potentially acquire any human language; her/his input determines which language it will be.

There are several facts that support this idea of innateness of linguistic abilities. One of them is the rapid acquisition of language. By the time children are three-years-old, they have mastered the majority of their native grammar [2]. This is possible only if children came to the world already equipped with some built-in linguistic knowledge. They still make mistakes, but even the mistakes show that they understand their grammar. An example of this is over-regularization of the past tense morpheme "ed". Thus, instead of saying "came", the child initially, produces "comed", instead of 'brought', we hear "bringed".

Eventually, when children realize that there are regular and irregular verbs in English, these mistakes disappear. It has also been shown that if caregivers try to correct these mistakes, they do not succeed. Children proceed at their own acquisitional pace in deriving the conjugational paradigms of verbs and other linguistic structures. Further, all children go through the same stages in their acquisition of the various properties of language. This could only be explained if they follow the same biological program of language development based on their innate abilities and linguistic input [1].

As far as second language acquisition is concerned, there are different theories of how it may proceed.

First, there are different ways of introduction of a non-native language. In many cases, adults are exposed to a foreign

language in a classroom. The grammar rules of the language are taught by an instructor, the same way as math or literature, for example. This is very different from the first language scenario, where teaching does not take place.

However, not all second language learning proceeds this way. In some case, children or adults are immersed in a second language, for example, if they study abroad or immigrate to a foreign country.

In the second case, they have much more exposure to the new language than in simple classroom learning. Language acquisitionists, in this case, have an opportunity to study different levels of achievements in the mastery of second language, as well as factors determining individual variation.

One of the factors that has been shown to have a significant impact is the age of arrival in a foreign country. Studies show that when children are exposed to a language from four to seven years of age, they are most likely to become native-like in their second language [3]. This window of opportunity to acquire a new language natively. has been referred to as the "critical period" in language acquisition [4].

Connected with the critical period is brain plasticity, which begins to decline after puberty. Thus, even if a speaker is immersed in a foreign language, e.g., an immigrant, in addition to being taught a language, she/he will show some traces of not being a native speaker. Most typically, it is a foreign accent, in spite of perfect grammar or may be, mistakes in idiomatic expressions.

Other topics covered by studies in language acquisition are bilingualism and language attrition. In many places of the globe, growing up with more than one language is a norm. Some examples are English-French in Canada, Flemish-French in Belgium, English-Spanish in the U.S., among many.

This gives us an opportunity to study language acquisition from a different perspective. We can examine whether the two languages interact and whether there is language interference from one to the other. In addition, sociolinguists look at the prestige each language may carry in the society, and whether the languages are used in the same or different circumstances throughout the day.

Another aspect of bilingualism is language attrition in one of the languages, most likely, in the native language. This can

happen when someone immigrates to another country and speaks the new language more often and in more circumstances than the native one. It is not only the vocabulary that changes in the native language but also the grammar [5]. Part of my work has to do with studying language attrition in Russian-English bilingual children in the U.S. who speak Russian at home and English elsewhere. Their language lost some of the native features, for example, variations in the conjugation and aspect of verbs and declensions of nouns [6]. One of the reasons for these changes is the dominant status and the frequent use of the second language (in this case, English).

Future studies can shed light on how to avoid language loss and preserve native languages.

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