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## LANGUAGE DEVELOPMENT

### Components of Language

It is generally accepted that there are four basic components of language: **phonology**, **semantics**, **syntax**, and **pragmatics**. Phonology refers to the actual sound stem of language. Children must learn to produce and recognize the sounds of language, separating them from environmental noises and speech sounds that do not denote differences in meaning. The ability to distinguish between differences in sound that do not denote differences in meaning and those differences in sound that do denote differences in meaning is called **categorical perception**. There are about 40 phonemes, or speech sounds, in English.

Semantics involves the learning of word meanings. For example, a child must learn that certain combinations of phonemes represent certain physical objects or events, and that certain words refer to entire categories, such as *women*, while others refer to specific members of categories, such as *mommy*.

Syntax refers to how words are put together to form sentences. The child must notice the effects of word order on meaning.

Finally, pragmatics consists of the actual efficient use of a language. Often the same sentence will have two or more very different meanings depending on how it is spoken. A child must learn to recognize these inflections and must learn to produce them as well.

An important precursor to language is **babbling**. Almost without exception, children—including deaf children—spontaneously begin to babble during their first year. In an important study, **Lenneberg, Rebelsky, and Nichols** (1965) showed that the age babbling begins is about the same for hearing children with hearing parents, hearing children with deaf parents, and deaf children. However, for hearing children, babbling continues and becomes more frequent, reaching its highest frequency between 9 and 12 months. For deaf children, verbal babbling ceases soon after it begins. An interesting 1991 study by Petitto and Marentette, however, suggests that deaf children with parents using sign language appear to babble using their hands!

## Language Acquisition

By around 18 months, the child may know dozens of words, but will usually utter them only one at a time. Because of this limitation, a word can mean more than one thing. For instance, depending on the child's intonation and/or accompanying gestures, the child could be using the word *apple* to label an apple, to ask for an apple, to ask whether a particular object is an apple, and so on. A toddler's use of a single word to express a complete thought is known as **holophrasis**. (The single word thus employed is called a holophrase.) Between 18 and 20 months of age, a child will begin combining words.

Fundamentally, knowledge of a language is evidenced by the ability to produce novel, grammatically correct sentences while refraining from producing nongrammatically correct ones. It also implies the ability to distinguish between such sentences.

Around the age of 2.5 to 3 years, children begin producing longer sentences. As development continues, vocabulary increases rapidly. You might expect that grammatical errors would decrease in this time as well, but the opposite is true. As children begin to master complex general rules, we often see what is referred to as **errors of growth**, or overregulation. A child who once said, "I ran" will now say "I runned to the store." Many of these errors are universal and are not the result of environmental influence. For instance, almost all boys at this age use "hissself" instead of "himself," even though children probably never hear the word "hissself" used by an adult. It is thought that children are generalizing some internalized rule. This suggests that language acquisition may not be the result of imitation and reinforcement, but the active application of a dynamic internalized set of linguistic rules.

For the most part, language is substantially mastered by the age of 5. This would suggest that language acquisition is fairly simple. Yet many adults find learning a second language to be a difficult task. Indeed, the ease with which children learn their first language has led some psychologists to speculate that children must have some special innate capacity for language acquisition. The name most closely associated with this position is that of linguist **Noam Chomsky**.

Chomsky is known for his study of **transformational grammar**. He focused on syntactic transformations, or changes in word order that differ with meaning. Chomsky noted that children learn to make such transformations effortlessly at an early age. He therefore concluded that this ability must be innate. This innate capacity for language acquisition is sometimes called a **language acquisition device (LAD)**, and is thought to be triggered by exposure to language. The LAD enables infants to listen to and process sounds.

Nativists such as Chomsky believe in a critical period between age 2 years and puberty for language acquisition. They believe that if a child was not exposed to language during this critical time, then being exposed to language later would be ineffective. It would have been unethical to design and conduct an experiment to test the theory. Unfortunately, a test case came to light with a victim of severe child abuse named **Genie**.

Genie was almost completely isolated from human contact from age 2 to 13, when she was discovered by authorities. Although she had been exposed to no language during this time, after training she was able to learn some aspects of syntax. Still, she was unable to master other aspects of syntax. What this may show us is that instead of a critical period in language development, there may be a sensitive period in language development. A sensitive period is the time when environmental input has maximal effect on the development of a particular ability. Most psychologists consider the sensitive period for language development to be before the onset of puberty.

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