Language

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Language development is a process starting early in human life, when a person begins to acquire language by learning it as it is spoken and by mimicry. Children's language development moves from simple to complex. Infants start without language. Yet by four months of age, babies can read lips and discriminate speech sounds. The language that infants speak is called babbling.

Usually, language starts off as recall of simple words without associated meaning, but as children grow, words acquire meaning, with connections between words being formed. As a person gets older, new meanings and new associations are created and vocabulary increases as more words are learned.

Infants use their bodies, vocal cries and other preverbal vocalizations to communicate their wants, needs and dispositions. Even though most children begin to vocalize and eventually verbalize at various ages and at different rates, they learn their first language without conscious instruction from parents or caretakers. In fact research has shown that the earliest learning begins in uterus when the fetus can recognize the sounds and speech patterns of its mother's voice.

Theoretical frameworks of language development

There are four major theories of language development.

The behaviorist theory, proposed by B. F. Skinner suggests that language is learned through operant conditioning (reinforcement and imitation). This perspective sides with the nurture side of the nature-nurture debate. This perspective has not been widely accepted in either psychology or linguistics for some time, but by many accounts, is experiencing a resurgence. Some empiricist theory accounts today use behaviorist models.

The nativist theory, proposed by Noam Chomsky, argues that language is a unique human accomplishment. Chomsky says that all children have what is called an LAD, an innate language acquisition device that allows children to produce consistent sentences once vocabulary is learned. His claim is based upon the view that what children hear - their linguistic input - is insufficient to explain how they come to learn language. While this view has dominated linguistic theory for over fifty years, it has recently fallen into disrepute.

The empiricist theory suggests, contra Chomsky, that there is enough information in the linguistic input that children receive, and therefore there is no need to assume an innate language acquisition device (see above). This approach is characterized by the construction of computational models that learn aspects of language and/or that simulate the type of linguistic output produced by children. The most influential models within this approach are statistical learning theories such as connectionist models and chunking theories.

The last theory, **the interactionist perspective**, consists of two components. This perspective is a combination of both the nativist and behaviorist theories. The first part, the information-processing theories, tests through the connectionist model, using statistics. From these theories, we see that

the brain is excellent at detecting patterns. The second part of the interactionist perspective, is the social-interactionist theories. These theories suggest that there is a native desire to understand others as well as being understood by others.

Biological preconditions

Linguists do not agree on the biological factors contributing to language development, however most do agree that the ability to acquire such a complicated system is unique to the human species. Furthermore, many believe that our ability to learn spoken language may have been developed through the evolutionary process and that the foundation for language may be passed down genetically. The ability to speak and understand human language requires a specific vocal apparatus as well as a nervous system with certain capabilities.

One hotly debated issue is whether the biological contribution includes capacities specific to language acquisition, often referred to as universal grammar. For fifty years, linguist Noam Chomsky has argued for the hypothesis that children have innate, language-specific abilities that facilitate and constrain language learning. In particular, he has proposed that humans are biologically prewired to learn language at a certain time and in a certain way, arguing that children are born with a Language Acquisition Device (LAD).

Other researchers, who believe that words and grammars are learned (rather than innate), have hypothesized that language learning results from general cognitive abilities and the interaction between learners and their surrounding communities. It has also recently been suggested that the relatively slow development of the prefrontal cortex in humans may be one reason that humans are able to learn language, whereas other species are not.

Environmental Influences

A purely behaviorist view of language development is no longer considered a viable explanation of how children acquire language, yet a great deal of research describes ways in which a children's environmental experiences influence their language skills. Michael Tomasello stresses that young children are intensely interested in their social world and that early in their development they can understand the intentions of other people."

One component of the young child's linguistic environment is (child-directed speech) also known as baby talk or motherese, which is language spoken in a higher pitch than normal with simple words and sentences. Although the importance of its role in developing language has been debated, many linguists think that it may aid in capturing the infant's attention and maintaining communication. Adults use strategies other than child-directed speech like recasting, expanding, and labeling:" Recasting is rephrasing something the child has said, perhaps turning it into a question or restating the child's immature utterance in the form of a fully grammatical sentence.

Expanding is restating, in a linguistically sophisticated form, what a child has said. Labeling is identifying the names of objects.

Social preconditions

It is crucial that children are allowed to socially interact with other people who can vocalize and respond to questions. For language acquisition to develop successfully, children must be in an environment that allows them to communicate socially in that language.

There are a few different theories as to why and how children develop language. The most popular -- and yet heavily debated- explanation is that language is acquired through imitation. The two most accepted theories in language development are psychological and functional. Psychological explanations focus on the mental processes involved in childhood language learning. Functional explanations look at the social processes involved in learning the first language.

There are four main components of language:

Phonology involves the rules about the structure and sequence of speech sounds.
Semantics consists of vocabulary and how concepts are expressed through words.
Grammar involves two parts. The first, syntax, is the rules in which words are arranged into sentences. The second, morphology, is the use of grammatical markers (indicating tense, active or passive voice etc.).
Pragmatics involves the rules for appropriate and effective communication.

Pragmatics involves three skills:

using language for greeting, demanding etc.
changing language for talking differently depending on who it is you are talking to
following rules such as turn taking, staying on topic

Each component has its own appropriate developmental periods.

Phonological development

From shortly after birth to around one year, the baby starts to make speech sounds. At around two months, the baby will engage in cooing, which mostly consists of vowel sounds. At around four months, cooing turns into babbling which is the repetitive consonant-vowel combinations. Babies understand more than they are able to say.

From 1-2 years, babies can recognize the correct pronunciation of familiar words. Babies will also use phonological strategies to simplify word pronunciation. Some strategies include repeating the

first consonant-vowel in a multisyllable word ('TV'-> 'didi') or deleting unstressed syllables in a multisyllable word ('banana'->'nana'). By 3-5 years, phonological awareness continues to improve as well as pronunciation.

By 6-10 years, children can master syllable stress patterns which helps distinguish slight differences between similar words.

Semantic development

From birth to one year, comprehension (the language we understand) develops before production (the language we use). There is about a 5 month lag in between the two. Babies have an innate preference to listen to their mother's voice. Babies can recognize familiar words and use preverbal gestures.

From 1-2 years, vocabulary grows to several hundred words. There is a vocabulary spurt between 18-24 months, which includes fast mapping. Fast mapping is the babies' ability to learn a lot of new things quickly. The majority of the babies' new vocabulary consists of object words (nouns) and action words (verbs). By 3-5 years, children usually have difficulty using words correctly. Children experience many problems such as underextensions, taking a general word and applying it specifically (for example, 'blankie')and overextensions, taking a specific word and applying it too generally (example, 'car' for 'van'). However, children coin words to fill in for words not yet learned (for example, someone is a cooker rather than a chef because a child will not know what a chef is). Children can also understand metaphors.

From 6-10 years, children can understand meanings of words based on their definitions. They also are able to appreciate the multiple meanings of words and use words precisely through metaphors and puns. Fast mapping continues.

Grammatical development

From 1-2 years, children start using telegraphic speech, which are two word combinations, for example 'wet diaper'. Brown (1973) observed that 75% of children's two-word utterances could be summarised in the existence of 11 semantic relations:

Eleven important early semantic relations and examples based on Brown 1973:

Attributive: 'big house'
Agent-Action: 'Daddy hit'
Action-Object: 'hit ball'
Agent-Object: 'Daddy ball'
Nominative: 'that ball'

Demonstrative: 'there ball'
Recurrence: 'more ball'
Non-existence: 'all-gone ball'
Possessive: 'Daddy chair'
Entity + Locative: 'book table'
Action + Locative: 'go store'

At around 3 years, children engage in simple sentences, which are 3 word sentences. Simple sentences follow adult rules and get refined gradually. Grammatical morphemes get added as these simple sentences start to emerge. By 3-5 years, children continue to add grammatical morphemes and gradually produce complex grammatical structures. By 6-10 years, children refine the complex grammatical structures such as passive voice.

Pragmatics development

From birth to one year, babies can engage in joint attention (sharing the attention of something with someone else). Babies also can engage in turn taking activities. By 1-2 years, they can engage in conversational turn taking and topic maintenance. At ages 3-5, children can master illocutionary intent, knowing what you meant to say even though you might not have said it and turnabout, which is turning the conversation over to another person.

By age 6-10, shading occurs, which is changing the conversation topic gradually. Children are able to communicate effectively in demanding settings, such as on the telephone.

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