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Factors that Influence Language Development

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Introduction

Learning to talk is one of the most visible and important achievements of early childhood. In a matter of months, and without explicit teaching, toddlers move from hesitant single words to fluent sentences, and from a small vocabulary to one that is growing by six new words a day. New language tools mean new opportunities for social understanding, for learning about the world, and for sharing experiences, pleasures and needs.

Subject

The nature of language knowledge

Language development is even more impressive when we consider the nature of what is learned. It may seem that children merely need to remember what they hear and repeat it at some later time. But as Chomsky[1] pointed out so many years ago, if this were the essence of language learning, we would not be successful communicators. Verbal communication requires productivity, i.e. the ability to create an infinite number of utterances we have never heard before. This endless novelty requires that some aspects of language knowledge be abstract.

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Ultimately, “rules” for combining words cannot be rules about particular words, but must be rules about *classes* of words such as nouns, verbs or prepositions. Once these abstract blueprints are available, the speaker can fill the “slots” in a sentence with the words that best convey the message of the moment. Chomsky’s key point was that since abstractions cannot ever be directly experienced, they must emerge from the child’s own mental activity while listening to speech.

Problems and Context

The debate

The nature of the mental activity that underlies language learning is widely debated among child language experts. One group of theorists argues that language input merely triggers grammatical knowledge that is already genetically available.[2] The opposition argues that grammatical knowledge results from the way the human mind analyzes and organizes information and is not innate.[3] This debate reflects fundamentally different beliefs about human development and is not likely to be resolved. However, there are at least two areas in which there is a substantial consensus that can guide educators and policy-makers: (a) the predictability of the course of language acquisition; and (b) its multi-determinate nature.

Research Results

Predictable language sequences

In broad strokes, the observable “facts” of language development are not in dispute. Most children begin speaking during their second year and by age two are likely to know at least 50 words and to be combining them in short phrases.[4] Once vocabulary size reaches about 200 words, the rate of word learning increases dramatically and grammatical function words such as articles and prepositions begin to appear with some consistency.[5] During the preschool years, sentence patterns become increasingly complex and vocabulary diversifies to include relational terms that express notions of size, location, quantity and time.[6] By the age of four to six or so, most children have acquired the basic grammar of the sentence.[7] From that point onward, children learn to use language more efficiently and more effectively. They also learn how to create, and maintain, larger language units such as conversation or narrative.[8] Although there are individual differences in rate of development, the sequence in which various forms appear is highly predictable both within and across stages.[9]

Determining factors

There is also considerable agreement that the course of language development reflects the interplay of factors in at least five domains: social, perceptual, cognitive processing, conceptual and linguistic. Theorists differ in the emphasis and degree of determination posited for a given domain, but most would agree that each is relevant. There is a large body of research supporting the view that language learning is influenced by many aspects of human experience and capability. I will mention two findings in each area that capture the flavour of the available evidence.

Social

1. Toddlers infer a speaker's communicative intent and use that information to guide their language learning. For example, as early as 24 months, they are able to infer solely from an adult's excited tone of voice and from the physical setting that a new word must refer to an object that has been placed on the table while the adult was away.[10]
2. The verbal environment influences language learning. From ages one to three, children from highly verbal "professional" families heard nearly three times as many words per week as children from low verbal "welfare" families. Longitudinal data show that aspects of this early *parental* language predict language scores at age nine.[11]

Perceptual

1. Infant perception sets the stage. Auditory perceptual skills at six or 12 months of age can predict vocabulary size and syntactic complexity at 23 months of age.[12]
2. Perceptibility matters. In English, the forms that are challenging for impaired learners are forms with reduced perceptual salience, e.g. those that are unstressed or lie united within a consonant cluster.[13]

Cognitive processes

1. Frequency affects rate of learning. Children who hear an unusually high proportion of examples of a language form learn that form faster than children who receive ordinary input.[14]

2. "Trade-offs" among the different domains of language can occur when the total targeted sentence requires more mental resources than the child has available. For example, children make more errors on small grammatical forms such as verb endings and prepositions in sentences with complex syntax than in sentences with simple syntax.[15]

Conceptual

1. Relational terms are linked to mental age. Words that express notions of time, causality, location, size and order are correlated with mental age much more than words that simply refer to objects and events.[16] Moreover, children learning different languages learn to talk about spatial locations such as *in* or *next to* in much the same order, regardless of the grammatical devices of their particular language.[17]
2. Language skills are affected by world knowledge. Children who have difficulty recalling a word also know less about the objects to which the word refers.[18]

Linguistic

1. Verb endings are cues to verb meaning. If a verb ends in –ing, three-year-olds will decide that it refers to an *activity,* such as *swim*, rather than to a *completed change of state,* such as *push off*.[19]
2. Current vocabulary influences new learning. Toddlers usually decide that a new word refers to the object for which they do not already have a label.[6]

Conclusions

Nature and nurture

These are just some of the findings that, taken together, speak convincingly of the interactive nature of development. Children come to the task of language learning with perceptual mechanisms that function in a certain way and with finite attention and memory capacities. These cognitive systems will, at the least, influence what is noticed in the language input, and may well be central to the learning process. Similarly, children's prior experience with the material and social world provides the early bases for interpreting the language they hear. Later, they will also make use of language cues. The course of language acquisition is not, however, driven exclusively from within. The structure of the language to be learned, and the frequency with which various forms are heard, will also have an effect. Despite the theoretical debates, it

seems clear that language skills reflect knowledge and capabilities in virtually every domain and should not be viewed in an insular fashion.

Educational and Policy Implications

Educators and policy-makers have often ignored preschoolers whose language seems to be lagging behind development in other areas, arguing that such children are "just a bit late" in talking. The research evidence suggests instead that language acquisition should be treated as an important barometer of success in complex integrative tasks. As we have just seen, whenever language "fails" other domains are implicated as well – as either causes or consequences. Indeed, major epidemiological studies have now demonstrated that children diagnosed with specific language disorders at age four (i.e. delays in language acquisition *without* sensori-motor impairment, affective disorder or retardation) are at high risk for academic failure and mental-health problems well into young adulthood.[20,21] Fortunately, the research evidence also indicates that it is possible to accelerate language learning.[22] Even though the child must be the one to create the abstract patterns from the language data, we can facilitate this learning (a) by presenting language examples that are in accord with the child's perceptual, social and cognitive resources; and (b) by choosing learning goals that are in harmony with the common course of development.

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