

Language Acquisition Device

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The Language Acquisition Device (LAD) is a postulated "organ" of the brain that is supposed to function as a congenital device for learning symbolic language (i.e., language acquisition). First proposed by Noam Chomsky, the LAD concept is an instinctive mental capacity which enables an infant to acquire and produce language. It is component of the nativist theory of language. This theory asserts that humans are born with the instinct or "innate facility" for acquiring language. Chomsky has gradually abandoned the LAD in favour of a parameter-setting model of language acquisition (principles and parameters).

Chomsky motivated the LAD hypothesis by what he perceived as intractable complexity of language acquisition, citing the notion of "infinite use of finite means" proposed by Wilhelm von Humboldt. At the time it was conceived (1957-1965), the LAD concept was in strict contrast to B.F. Skinner's behavioral psychology which emphasized principles of learning theory such as classical and operant conditioning and imitation over biological predisposition. The interactionist theory of Jerome Bruner and Jean Piaget later emphasized the importance of the interaction between biological and social (nature and nurture) aspects of language acquisition.

Differing from the behaviorists who emphasize the importance of social interactions in language acquisition, Chomsky (1965) set out an innate language schema which provides the basis for the child's acquisition of a language. The acquisition process takes place in an infants mind because of this mental organ which enables him/her to speak despite the limited nature of the Primary Linguistic Data (PLD, the input signals received) and the degenerate nature (frequent incorrect usage, utterances of partial sentences) of that data. Given this poverty of the stimulus, a language acquisition model requires a number of components. Firstly, the child must have a technique for representing input signals and, secondly, a way of representing structural information about them. Thirdly, there must be some initial delimitation of the class of possible language structure hypotheses. Fourthly, the child requires a method for determining what each of these hypotheses implies with respect to each sentence. Finally, an additional method is needed by which the child can select which hypothesis is compatible with the PLD.

Equipped with this endowment, first language learning is explained as performed by a Language Acquisition Device progressing through the following stages:

The device searches the class of language structure hypotheses and selects those compatible with input signals and structural information drawn from the PLD.

The device then tests the compatibility using the knowledge of implications of each hypothesis for the sentences.

One hypothesis or 'grammar' is selected as being compatible with the PLD.

This grammar provides the device with a method of interpreting sentences (by virtue of its capacity for internally representing structural information and applying the grammar to sentences).

Through this process the device constructs a theory of the language of which the PLD are a

sample. Chomsky argues that in this way, the child comes to know a great deal more than she has 'learned', acquiring a knowledge of language, which "goes far beyond the presented primary linguistic data and is in no sense an 'inductive generalization' from these data."

In some views of language acquisition, the LAD is thought to become unavailable after a certain age -- the critical period hypothesis (i.e., is subject to maturational constraints). Feral children cases such as Genie provide key examples for the LAD aspect of the nativist theory and that it becomes unavailable after a certain age.

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