

PSYCHOLOGICAL FOUNDATIONS OF HUMAN SPEECH

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Annotation. *This article provides an in-depth analysis of the psychological foundations of human speech, studies its cognitive, neuropsychological and socio-developmental dynamics. The article considers the importance of speech, interdisciplinary approaches to its study, in particular from the perspective of psycholinguistics and cognitive psychology. It also discusses the processes of speech acquisition and development, the evolution of speech theories (from behaviorism to cognitive and socio-interactive approaches), psycholinguistic models of speech production and comprehension, and the dialectical relationship between speech and thinking. The study aims to provide a holistic understanding of the complex mechanisms of human speech by synthesizing the literature on the topic.*

Keywords: *Human speech, psycholinguistics, cognitive psychology, neuropsychology, speech acquisition, speech theories, thinking, development*

Speech is one of the most complex and fundamental abilities of humanity, which plays a central role in a person's understanding of the world, establishing social relations, and transmitting cultural values from generation to generation. This process is not only a means of communication, but also the basis for the formation and development of thinking. The study of speech is of urgent importance for various scientific fields, including linguistics, psychology, neurobiology, cognitive sciences, and philosophy. From a psychological point of view, the study of speech requires an understanding of the internal, subjective mechanisms of its emergence, development, perception, and production.

Psycholinguistics, an interdisciplinary field, in particular, as a synthesis of linguistics and psychology, plays an important role in the study of speech. As

Nasirova (1) notes, psycholinguistics was coined by N. Pronko in 1946 and became widespread in the 1950s, but its roots go back to 19th-century psychologism, the work of thinkers such as W. von Humboldt and Heymann Steinthal. This field studies inner speech, speech perception, and language acquisition processes. This article aims to provide a thorough analysis of the psychological foundations of human speech, its cognitive and neuropsychological mechanisms, the dynamics of acquisition and development, as well as its relationship with the main theories of speech and thinking. The complex nature of speech requires its analysis through interdisciplinary approaches, which will serve to further understand its unique place in human development.

An analysis of the scientific literature on the psychological foundations of human speech shows that this field is located at the intersection of several important disciplines. Nasirova (1) comprehensively analyzes the emergence and development of psycholinguistics, describing it as a synthesis of linguistics and psychology. According to the author, psycholinguistics focuses on such processes as inner speech, speech perception, and language acquisition. This study emphasizes the problems of text perception and comprehension, the need to model semantic structure, as well as the importance of conducting research on optimizing communication, machine processing of semantic information, and foreign language teaching. The work of representatives of the Russian psychological school, such as L.S. Vygotsky, A.A. Leontyev, and A.R. Luria, is noted as being of fundamental importance in this direction.

Cognitive psychology is one of the main directions that has opened up new horizons in the study of speech. His "cognitive revolution", which officially began with a meeting at the Massachusetts Institute of Technology (MIT) in 1956, was shaped by scientists such as D. Miller, H. Simon, A. Newell, and N. Chomsky. Cognitive psychology focuses on mathematical modeling of human experience and thinking, and studies cognitive processes such as memory, attention, emotions,

reasoning, and decision-making. The first cognitive psychology textbook by W. Neisser, published in 1967, laid the foundations for the field. Cognitive psychology views the brain as a biocomputer and develops algorithmic models that are important in explaining the processes of speech production and comprehension.

Neuropsychology, on the other hand, studies the location of speech in the brain and its neurophysiological basis. Early attempts, including Marc Dax's 1836 observations of left hemisphere lesions and speech disorders (although unpublished), Paul Broca's 1861 discoveries of motor aphasia and Broca's area, and Carl Wernicke's 1874 discovery of the sensory speech center, advanced the theory of localization of speech in the brain (6). However, scholars such as John Hughlings Jackson have argued that aphasia is a complete loss of speech. . They emphasized that it is necessary to take into account not only the propositional (meaningful) aspects of speech, which are associated with the left hemisphere, but also the emotional-intonational aspects, which are associated with the right hemisphere. The development of speech is associated with the general development of the central nervous system (3), and neural formations are active from the earliest stages of embryonic development. Brain injuries or developmental defects in childhood (genetic diseases, autism, Down syndrome) can lead to serious disorders in speech development. Methods such as electroencephalography (EEG) make it possible to study the electrical activity of the brain during speech processes. Thus, speech is a complex set of complex cognitive and neuropsychological processes, which are realized as a result of the coordinated activity of different parts of the brain.

The child's acquisition of speech is a crucial psychological process in his life, and is the foundation for the formation of personality, cognitive development and social integration. The foundations of speech begin to form by the age of one, developing from the first vocalizations (babbling) to "autonomous speech", during which the child rhythmically repeats the sounds of the environment (3). There is a certain "sensitive period" in the acquisition of speech, which lasts from birth to about

9-11 years. During this period, the neural networks for speech centers in the brain develop most actively, and after the age of 10, the rate of this development slows down (3). Therefore, early intervention is of great importance in cases where speech disorders are detected. One of the main conditions for speech development is verbal interaction and the systematic influence of adults. Children learn the rules of language by hearing the speech of others around them, imitating them, and interacting with them. Psychologically, the formation of speech in preschool children (4) is a complex process, influenced by many factors. During this period, children's communicative abilities develop gradually. Each stage is characterized by its own psychological characteristics. First, the child learns to distinguish sounds, then moves on to understanding words and producing them himself, and later the ability to construct sentences and express complex thoughts is formed.

Makhmudova and Mamadjonova (5), analyzing the methods of developing the speech of preschool children, emphasize the importance of teaching the mother tongue and developing communicative skills in the pedagogical process. They identify the following tasks: enriching the child's vocabulary by introducing him to the environment, forming the foundations of grammatical speech, developing the sound culture of speech, improving dialogic and monologic speech skills, introducing him to fiction and preparing him for elementary literacy. These tasks are implemented gradually, depending on the age of the children. For example, in developing vocabulary, attention is paid to introducing various word categories through real examples, encouraging their active use, and prioritizing literary language over dialectal or vulgar words.

Unfortunately, the increase in the number of speech disorders in children over the past two decades (3) increases the urgency of research and practical measures in this area. Factors such as genetic disorders, autism, Down syndrome, mental retardation, brain injuries, birth complications, and infections can disrupt speech

development. Therefore, it is important to regularly monitor a child's speech development and seek timely professional help in case of any disorders.

Theoretical approaches aimed at explaining the emergence and development of speech have historically gone through several stages. One of the earliest approaches was behaviorism, which viewed speech primarily as a chain of stimuli and responses. Behaviorists believed that children acquire speech through imitation and reinforcement from adults (for example, praise for the correct word). This theory attributed language learning to the same mechanisms as learning any other behavior.

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