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THEORETICAL ANALYSIS OF CONCEPT PERCEPTION FEATURES BY LEFT-HANDED INDIVIDUALS

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Abstract. *The article is devoted to the study of the influence of left-handedness on cognitive processes and comprehension of concepts. The work examines the theoretical approaches of cognitive psychology and neuropsychology to the problem of left-handedness, emphasizing the connection of left-handedness with the dominance of the right hemisphere of the brain. Particular attention is paid to the grounds presented in the literature on how the right-hemisphere (synthetic and figurative) perception of the world affects the assimilation and transformation of concepts into emotionally rich images. The author concludes that left-handed people have a unique ability to intuitively and creatively comprehend discursive information, which can contribute to their success in artistic and scientific activities.*

Key words: *left-handedness, functional asymmetry, right-hemispheric thinking, perception of concepts.*

Introduction.

Understanding how differently one can see the surrounding real world is a source of intense social dynamics for humanity, a wide range of mutual emotions of a wide spectrum, from surprise and passionate interest in some Other, to categorical rejection and even hatred, experienced physically, in clashes and conflicts, and mentally - in numerous scientific and artistic versifications. And such a group of people, which is unusual in relation to the principle of vertical symmetry - persons with a dominant left hand, due to the obscurity of the causes of the phenomenon and spatial-ethical opposition to the right-handed majority of the population, is a subject of special interest (sometimes, unfortunately, discriminatory).

The peculiarities of perception and processing of information in people with a dominant left hand are therefore the subject of active study in modern psychology and neuropsychology. Research shows that left-handedness is associated with a different distribution of functions between the hemispheres of the brain, which can affect cognitive processes, including the perception of concepts, problem solving and the formation of associative links. The perception and awareness of concepts by left-handers as not just objects of the surrounding world, but mental, informative entities, is of particular interest, since it sheds light on the specifics of their processing of discursive abstract information - a process during which one must be as objective as possible. How strict and how colored are the frameworks of this objectivity in this special group of people who are not oriented towards standards and norms is a question of particular interest. A.V. Semenovich notes that "the characteristics of this part of humanity are so demonstrative, and sometimes incredible, that they simply "beg to be" under the microscope of interdisciplinary scientific research" [11, p. 3].

The relevance of this topic is due to the growing interest in individual differences in psychology, as well as the need to develop more inclusive teaching

methods and psychodiagnostics that take into account the specifics of the cognitive strategies of left-handed people. Thus, N.N. Bragina, T.A. Dobrokhotova, O. Nikolaychuk, R.W. Sperry studied the psychophysiological characteristics of left-handers, the functional asymmetry of the brain and its impact on the work of thinking. L.I. Beglova, A.A. Vasilyeva, Ya.S. Kokurkina, T.A. Molinar, M.A. Pavlova, E.E. Chernova studied the psychological characteristics of the perception of discursive information in children with a dominant left hand. Indeed, the study of the specifics of the perception of mental information, concepts, in people with a dominant left hand allows us to better understand the patterns of brain function and expand our understanding of the plasticity of the nervous system.

The purpose of this work is a theoretical analysis of the characteristics of the perception of concepts in left-handed people and the identification of the factors that determine these characteristics. The study examines theoretical approaches to the problem of left-handedness, presents the results of research in the field of cognitive psychology and neuropsychology, and analyzes the characteristics of information processing strategies of left-handers, which may be important in their perception of such highly cognitive forms and products of thinking as concepts.

Main text

The phenomenon of left-handedness is a differential psychological phenomenon. It determines individual psychological properties of a person that have an organic origin and are associated with the peculiarities of their bodily organization. According to the definition, "a left-hander is a person who predominantly uses his left hand instead of his right" [3, p.32]. The medical encyclopedia defines "left-handedness as the use of the left hand when performing various actions" [8, p.145]. The predominance of the use of the left hand in motor activities is a form of detection of left-handedness. In external signs, left-handedness is expressed by the fact that the left hand is somewhat larger, the veins are more pronounced, the muscles of the hand are better developed.

There have been many theories about the origin of left-handedness, but the nature of this phenomenon has not yet been fully determined. Since ancient times, right-handers were considered the norm, and left-handers an exception or pathology. Because of this, the word "left" has acquired a negative context; in different languages it is used to denote awkwardness, false choice, illegality, lies, and left-handers themselves are treated with caution.

N.Sh. Korashvili identified three approaches to explaining the origin of the phenomenon of left-handedness [6, p. 27]. They are as follows:

- socio-evolutionary direction;
- theory of visceral distribution;
- theory of heredity.

In this article, we will touch upon the theory of visceral distribution, as the main one in modern psychological literature.

The most common justification for left-handedness in psychological literature is that left- or right-handedness is associated with the functional asymmetry of the cerebral hemispheres (A.N. Bragina, E.P. Ilyin, I.P. Pavlov, V. Rotenberg, V.F. Fokin). The psychological dictionary notes that functional asymmetry of the

hemispheres is certain features of the functions and structure of the brain, due to which the left hemisphere dominates in the implementation of certain mental functions, and the right hemisphere in others [2, p. 8; 9, p. 115].

Functional asymmetry lies in the fact that there are different strategies for perceiving and processing information, depending on the hemisphere of the brain. The right and left hemispheres specialize in certain functions that are distributed between them. The left hemisphere is responsible for analyzing and systematizing information, converting it into speech and writing, consistently processing information and establishing connections between it, and is also mostly responsible for mathematical and linguistic functions, perception of time and space, while the right provides a holistic display of the world, perception of space, understanding of words and associations for solving certain problems, can perceive different stimuli, compares different objects. The left hemisphere is responsible for positive emotions, vulnerable to negative ones, regulates states of tension and overstrain, while the right one controls emotional signals and emotional state, is responsible for negative emotions, and plays a leading role in the processes of adaptation and stress, is responsible for the state of anxiety and fear. Both hemispheres closely interact. Left-handedness is a more obvious sign of the dominance of the right hemisphere of the brain. It is known that people with a dominant right hemisphere have a more holistic and figurative perception of the world, and certain mental processes are slower for them [10, p. 114]. Left-handed people tend to experience, express and record negative emotions to a greater extent. They remember the location of objects well, are better oriented in images and terrain, and often rely on intuition in their activities. Among artistic professions, people with a leading right hemisphere are often found. Consequently, left-handedness is a phenomenon with a corresponding strategy of world perception, which is related to the sensuality of cognition of the world and the possibility of a free emotional attitude to information of a rationalistic order, operating with concepts, and to such logical forms of thinking themselves - concepts.

It is known that a concept is “an idea expressed in words about the general and essential features of objects and phenomena of reality” [5, p. 29], “based on our knowledge of these objects and phenomena” [7, p. 304]. Concepts by definition should resist the intuitive-figurative strategy of their perception and awareness. But since among individuals with a dominant left hand there were great thinkers and scientists - for example, A. Einstein, I. Newton, M. Curie, L. da Vinci, we should assume the existence of such a possibility of “artistic” comprehension of concepts. In psychological literature, one can find several indications showing how people with a dominant figurative-sensory perception of phenomena can realize and understand concepts. Firstly, a concept as a form of thinking, improving in discussions and debates, becomes the cognitive baggage of humanity and an instrument for the development of science, an object of mental assimilation and perception. In the process of learning concepts, different people discover shades of meaning and different accents, due to which there are different approaches to defining phenomena. The specifics of perceiving concepts depend on the personal characteristics of the perceptor. For example, synthetic and analytical types of perception are distinguished. That is, the perception of concepts, like perception in general, is

variable and colored by the individuality of the perceiver.

Secondly, among some types of concepts, they are distinguished by a bipolar criterion isomorphic to emotional valence. A.D. Getmanova writes that there are positive and negative concepts. Positive concepts reflect the presence of a certain quality in an object: “perfect”, “greedy”, “loving”. Negative concepts record the absence of quality in the taken object: “immorality”, “hopelessness”, “impeccability” [4, p. 46]. There is also a species dichotomy “concrete - abstract concept”. Concrete concepts are characterized by the presence of physical characteristics, such as color, weight, shape, mass of the object. Abstract concepts are the most mental type of concept, abstracted from the sensory attributes of a phenomenon and focused on their essence. “Abstract concepts are distinguished by the absence of a clearly perceived referent and are more closely associated with emotions and mental states” [1], which is the basis for their certain subjective note in the process of awareness.

Thirdly, concepts, being realized and assessed, become the property of memory. It is known that information stored by memory is melted and changed in a certain way, while images of perception become secondary images - ideas. Perceived concepts also become ideas. The mechanisms of their change in a latent form are already present at the beginning of this process - in the very situation of perception, when the concept as a form of thinking is transformed into a perceptual image. The further path in the storage of memory is an organic continuation of this process. Becoming a secondary image, a representation, the concept becomes “less clear in content and bright in emotional coloring, is distinguished by generality and loses detail” [7, p.235-236]. The concept-representation is also a changeable dynamic phenomenon; the process continues. Any representation has an element of generalization, the development of representations is carried out by expanding generalizations. This is done in two ways: by systematization (representations approach a scheme, losing individual characteristics), and by developing images-types (representations "accumulate" details, become more visual, without losing individual characteristics). The second way can lead to the creation of artistic images [7, p. 244]. And the concepts that pass through such a path in the consciousness of a person pave the way not to the emergence of "second-order concepts", judgments and conclusions, but to the formation of concepts-images, future artistic images, embodied with the help of certain expressive techniques. It is obvious that persons with a dominant left hand and, accordingly, a right-hemisphere, synthetic, "artistic" strategy of perception, are aware of and assimilate concepts, relying on their figurative-holistic vision of the world. It can be assumed that their "sensory" experience of world knowledge will affect the comprehension of concepts, imposing emotional trails and semantic shades on the corresponding mental product. And the conscious concept as a dynamic formation of consciousness of individuals with a dominant left hand has a special tendency to become an instrument of creative mental activity, at least to possess a magnetic "high-voltage" emotional charge of such, naturally becoming an instrument of scientific or artistic innovative activity.

Summary and conclusions.

Have been considered individuals with a dominant left hand, according to the most widespread explanatory visceral theory, have a dominant right hemisphere, and,

accordingly, a synthetic, figurative-sensory strategy of world perception. Therefore, the peculiarity of their perception and assimilation of discursive logical information, a striking example of which are concepts, is of interest.

Concepts as a form of thinking expressed in the word are reflecting the general and essential features of objects and phenomena of reality, should antagonize such an inaccurate, figurative reversal of them in the process of perception, which is typical for left-handers. Despite the supposed specificity of the perception and awareness of concepts by individuals with a dominant left hand, there are many scientists among them – representatives of the exact sciences, which means that the process of their assimilation of concepts was both original and successful. Theoretical analysis of the literature allows us to identify the following grounds for the specificity of left-handers' perception of concepts: individual features of the perception process, where, for example, synthetic and analytical types are distinguished; isomorphism of criteria for identifying certain types of concepts and emotional valence (positive - negative); the possibility of transforming concepts in memory storage into image-types with their clarity and individual features, anticipating the emergence of concept-images that can become artistic.

People with a dominant left hand and a right-hemisphere type of thinking perceive and master concepts through a figurative and holistic vision of the world. Their sensory cognition imposes emotional and semantic shades on the information they learn, including the concepts they perceive. This feature makes left-handed individuals predisposed to scientific and artistic innovations, thanks to their ability to transform abstract ideas into emotionally charged and creative forms.

Of course, the truth of the results of this theoretical analysis can be revealed by a corresponding experimental study.

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