

# The Deaf Persons' Problem of Perception and Peculiar Language Thinking

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**Abstract**—The purpose of this article is to analyze the main aspects of visual and conceptual perception. A special attention is given to the peculiarities of perception of things by the deaf people. The specific difficulties encountered by the deaf people in the process of perception are mentioned. The article also presents various aspects of sign language. The conclusion is made about the connection between language thinking and visual thinking.

**Keywords**—perception; artistic perception; Gestalt; the deaf persons; sign language; language thinking

## I. INTRODUCTION

Initiation of future artists in the history of fine arts is very important for shaping their creative personality. In this regard, we would like to raise the problem of artistic perception, and also to highlight the deaf persons' artistic and language thinking peculiarities. The perception of art is associated with the process of cognition, depends on the compositional scheme and implies the relation to the sensory experience. In this setting the act of thinking (cognition) is connected with word, and its meaning, which can be considered as both a thinking-related phenomenon, and as a speech-related phenomenon.

## II. PROBLEM OF ARTISTIC PERCEPTION

The perception as a whole is a result of studying and analyzing the reality. The visual perception not just captures the object, but selects the items to focus on, ways to treat the object.

The perception as a physical phenomenon represents "a reflection of items, situations and events produced under the direct impact of physical stimuli on the receptor surfaces of the sensory organs with their properties and their integrity combined. All movements involved in the act of perception are valuable for analyzing the acting stimuli and synthesizing them into a complete image of an item. The successfulness of perception is determined by the specific conditions upon which the activities are carried out and the past experiences" [3].

Many strands of psychology have been addressing the problem of perception, especially, the Gestalt psychology, from the perspective of the Gestalt psychologists the perception is characterized by integrity, because it is based

on formation of integrated structures i.e. the Gestalts. An artist who creates a visual representation solves a psychological problem. That is why he needs to study the principles of perception and to focus not only on the natural phenomena, but also on the visual effects produced by these phenomena. The Gestalt psychology, the methods of which suggest analyzing not the separate elements, but their correlation, solves the problems of this kind.

In his work "Art and Visual Perception," Rudolf Arnheim employs the principles and methods of the Gestalt psychology.

All elements of an artistic work are closely interrelated and they function only within the model of the whole. The brain also functions as the whole, that's why the perception, which is associated with the thinking process, is a creative work. "From a psychological viewpoint it means that studying art is an essential part of gaining knowledge about a human being" [1].

According to Rudolf Arnheim, the perception is a thinking process, the reasoning involves intuition and the observation is a creative work.

Arnheim states repeatedly that the perception is a figurative creative capacity. The perception is not the registration of a perceived object, but is an active studying of this object, for which studying the outside world is needed. It is a complex process in terms of treating an object under consideration. The work of art represents a complex whole, which cannot be understood without analyzing its components [1].

The perception deals mainly with senses, and the cognition — with intelligence, but, when it comes to their structure, they are similar. The brain is the terminal point of perception, it's there that all parts of the perceived object are grouped into the integrated whole.

E. Panofsky, a representative of the iconological method in the art studies, singled out several aspects of perception of the language of the arts. The first one is formal, when a motion or a gesture is perceived as "part of the overall pattern of colors, lines and shapes" forming the visible world; the second one is substantive, or meaning-based, the aspect of perception, when the objects and the events identified through the motions and the gestures, evoke the

specific response from the onlooker. The third aspect is associated with a problem of getting the feel of another person's practical experience, which makes for grasping the new meaning intentions. Panofsky thought that the understanding of the meaning and the significance of the viewed things requires mastering a specific kind of sensitivity which is inherent in the practical experience [8].

In the opinion of Gombrich, there are certain "codes of recognizability" that may come as the details of an image and the compositional schemes. The codes and the schemes are intended to summon the memory of a visual image. They are the result of the past experiences. The visual perception is based on the relationship between the remembrance and the recognition. Both the visual images and the verbal ones can be associated with the similar process. According to Gombrich, a verbal image, as well as the visual image, must be recognizable by the recipient as one belonging to the same cultural paradigm.

In his works concerning the symbol, Gombrich introduces the notion of "contribution of spectator (eye-witness)" which to the greater extent is connected to the visual art [6]. Interpretation of this view depends on many factors, recognition of the image itself, its external shape, dimensions, peculiarities of coloring, etc.

When a piece of art, especially a picture, is subject to perception, a person deals with perception of reality. Here, the peculiarity of overall perception related to the life experience is most pronounced.

### III. THE DEAF PERSONS'S PECULIARITIES OF PERCEPTION

To take the visual arts in good sense, one needs to have some life experience. The young people with a loss of hearing often experience problems with perception because they lack the necessary knowledge. Observing the process of perception among the deaf persons has shown that it's not always that they have a complete image due to the shortage of conceptual experience.

The perception is associated with the cognitive process, any object is perceived as an integral whole. The perception is a conscious process, in which the verbal interpretation and speech development (oral practice) play a big role.

The hearing-impaired persons experience problems with verbal concepts due to the impediments in speech development. For the same reason, the deaf persons do not have the sufficient experience, with the help of which the perceived images are processed. Thus, we see the distortion of the perceived objects among the deaf persons.

As noted by researchers, compensation for hearing impairments shall consist in practicing speech development and cognitive processes — perception, memorizing, imagination and reasoning.

The researches in the field of deaf education have shown that, in the perception process, it is difficult for the deaf children to analyze and synthesize the past experiences. The biggest problems arise not in relation to the visual perception, but in relation to the comprehension of the

received information, which is associated with the difficulty of interaction between the perception and the speech.

The important role in the deaf persons' perception is played by visual image, which is the compensation for the hearing-impaired. The researches prove that the deaf children, who start have a good command of sign language, perceive and analyze the shapes of the items better. The perception of reality is associated with speech experience, of which a deaf child having no command of sign language is deprived. With time, the perception of a hearing-impaired child is developing in the same way as the perception of a child without a hearing impairment, provided that the speech development is in practice.

When a deaf child comes across more intricate processes of visual perception which require a conscious analytical synthesizing, this child experiences greater difficulties than his peers without hearing impairment. However, the deaf children who master sign language do not encounter the problems of this kind [2]. Thus, in the process of conscious visual perception, a connection between perception of visual and verbal forms can be traced.

The deaf persons' visual perception and intellectual processing of images do not always match. In this setting, for the persons with hearing impairments, visual perception plays a very important role in their lives. Reading of information through facial expressions, gestures, fingerspelling, lip motions are visual processes that involve the utmost attention.

When working with the hearing-impaired students, we encounter the perception-related problems as well. Taking a picture in good sense (perception) is a complicated process. Apart from visual reading of objects (shapes, forms, space, arrangement, contours, coloring), the recognition (or non-recognition) of design occurs. The students are also offered to perform a formal-and-stylistic analysis of a piece of art. All this requires that the students have not just theoretical knowledge, but also the ability to synthesize and analyze their individual visual experience. When teaching the formal-and-stylistic analysis, it is important that all concepts and terms are understood correctly. To the hearing-impaired students, the correct comprehension and memorizing of terms and concepts often come with difficulty. Because visuality has a compensatory ability for a person with a loss of hearing, the students are offered to draw up a list of art-related terms and concepts and make the corresponding pictures for these terms and concepts.

It's very important not just to familiarize the students with the art-related concepts and terms, but to develop their artistic way of thinking, as well as the ability to understand the synesthetic concepts and terms, such as rhythm, accord. For this purpose, the emphasis is made on the specific visual aspects and regularities.

The various methods of the art studies shall be combined, so that the students could perceive the pieces of visual art in their integrity. One of the tasks is to ensure the comprehension of the history of art, its spiritual content, the evolution in experiencing the perception-based cultural

representations. The approach suggested by the iconological school based on highlighting and systematizing of artistic motives which are repeated throughout the history of the fine arts and identifying the similar representations in the works of art produced in different epochs is a creative process of the historical analysis.

#### IV. PECULIARITIES OF SIGN LANGUAGE

The deaf persons' language thinking and the language perception have their differences. The sound marks in sign language are replaced with visual structures. In terms of sensory perception, we are only dealing with the visual perception. But for the deaf persons' there is a difference in grasping the meaning of a sentence, as of an image or a model of reality, which is expressed in written form or with the help of a gesture. It means that "the propositional signs" which have the same semantic meaning are perceived differently by the deaf persons, i.e. these are different signs. "The essence of a propositional sign will become very clear, if we imagine it to be composed not of the written signs, but of spatial objects (for example, composed of tables, chairs, books). The mutual spatial arrangement of these things will then express the meaning of the sentence" [5]. This is fully realized in sign language.

In the language-related researches, an issue is often raised concerning the connection between language and thinking, which is a matter of interest in relation to the language thinking of the hearing-impaired persons. L. Wittgenstein's "Logico-Philosophical Treatise" presents a logical model "language-logic-reality" elucidating the informational-and-cognitive possibilities of making sense of the world through the language. Here, the question is not about thinking as such, but about expression of a thought.

The structural principles underlying the artistic perception are called "the visual concepts" by Arnheim. He divides these concepts into "the perceptive ones," with the help of which the perception process occurs, and "the representational ones," which are used by an artist when embodying an idea in artistic form [1]. In sign language we are dealing only with "the visual concepts," which combine the perception and the depiction.

The brain activity allows for compensating the absence of one of the senses. "A motion and a sound are inseparable companions. It's the motion that initiates an oscillatory process, which, within a specific range of vibration frequencies, is perceived by the hearing organs — the specialized receivers of mechanical displacements which appeared in the process of biological evolution" [4].

Even though sign language is not a dance, it is associated with movement, tempo, rhythm, visuality, emotionality, facial expressions, i.e. with the same categories which appear in dancing. Some historians consider a dance as a form of the kinetic speech.

There is a close relationship between the senses, and if, for some reason, reduction or loss of any of the senses occurs, another sense can assume its functions.

Oliver Sacks describes such phenomenon as the so called "phantasmal voices" which a 7-year old boy who lost his hearing in the early childhood could "hear." He "heard" voices when people spoke to him, if he could see the faces of the speakers. Here is what he remembers: his deafness was made more difficult to perceive because his eyes had unconsciously begun to translate motion into sound. His mother spent most of the day beside him and he understood everything she said. He had been reading her mouth, and while doing so, he seemed to hear her voice. It was an illusion which persisted even after he knew it was an illusion. This illusion allowed him to retain the phantasmal voices of his relatives. They were the projections of habit and memory, but they were closely related to the visual perception coming from reading the speaker's lips. One day, when he was not able to see the lips of his brother, because the latter covered his mouth with his hand as he spoke, he ceased to hear his phantasmal voice. That is how he describes his version of the situation: "Silence! Once and for all I understood that when I could not see I could not hear" [9].

This example proves that there is a much closer relationship between the hearing and the vision, than just being "the projections of habit and memory." Wright not just retained in his memory the voices of his relatives, but the strong connection appeared in his perception between a visual image (when he saw the mouth of the speaker) and the sound image (when he remembered the sound of the speaker's voice).

When analyzing the expression of the spatial relationships in sign language, several ways to render the real space have been identified. It has to do with a means of making a gesture and gesture structures, when the gestures retain their configuration, but their arrangement is different from that appearing in a neutral rendering. The gestures can be turned otherwise, oriented differently; they can be nearer or farther. Such gestures are called "the modified gestures." "The experiment showed that, apart from representation function, the modified gestures carry additional information about the spatial connections between the items, and, thus, they are the means of expressing the spatial relationships in sign language" [7].

Because sign language is a visual system aimed at compensation for receiving information, he corresponds to the structure of such system. The researchers dealing with descriptions of certain gestures and gesture combinations, including several gestures, the so called "gesture structures," point out the polysemy of a gesture, when the same gesture represents various items and phenomena, on the other side - the "wordiness" of gestures, when, in order to render a certain phenomenon, which is denoted by one word in a language, several gestures are used, also - the lability of a gesture, its ability to vary depending on the conditions imposed on the described item. The researchers also take interest in the techniques of performing a gesture and its presentation [7].

## V. CONCLUSION

For a deaf person the visuality performs a compensatory function. Sign language can make for development of intersensual connections, because, while being a visual system, it is associated with different categories – related to facial expression, space, time, plasticity. Thus, it can be concluded that sign language with its synesthetic abilities not only provides for communication and serves as compensation, but also allows for developing the spatial thinking.

With account for the difficulties and the peculiarities of the hearing-impaired students, using various methods and approaches, we can address the pedagogical tasks concerning the problems of artistic perception. In doing so, it is necessary to consider the peculiarities of sign language which is based on visuality.

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