

HISTORY OF ART

MUSICAL PERFORMANCE IN THE ASPECT OF THE COGNITIVE PARADIGM OF MUSIC KNOWLEDGE

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DOI: <https://doi.org/10.30525/978-9934-588-13-6-3>

In the mid-1950s the informative-communicative scientific paradigm was replaced by a cognitive paradigm, which first emerged in Western psychology and subsequently became interdisciplinary. The birthday of cognitive science, as a new field of scientific knowledge, is considered to be September 11, 1956, the day when a symposium on the problems of artificial intelligence was held at the Massachusetts Institute of Technology (MIT). At this symposium, spoke such distinguished scientists as Noam Chomsky, George A. Miller, A. Newell and G. Simon and others. Scientists have discussed the problem of research on the work of neural networks of the brain using the latest supercomputers of that time. The reports raised problems of balance of mind and language, limitation of working memory, speed of recognition of images, theory of detection of signals. In 1960 Jerome Bruner and George A. Miller organized the first center for cognitive research at Harvard University, where intensive neuro-cybernetic studies of cognitive psychology were developed. As a result we have studies of mental and cognitive processes, through which a person recognizes, perceives and feels the world around him. Gradually the interdisciplinary cognitive paradigm began to embrace both foreign and domestic humanities.

Due to the fact that consciousness and thinking are genetically linked to language, the core of research that began in cognitive psychology is cognitive linguistics, which not only forms the apparatus of cognitive methods and scientific terms, but there are areas such as cognitive semantics, cognitive linguistics, and neurolinguistics that employ methods developed by cognitive psychology.

In the 90s of the twentieth century a new field of cognitive science appeared in foreign and American humanities – cognitive musicology. Its main direction is functioning of human brain neural networks in the perception of music using computer models of neural networks. In the field of computer synthetization of music perception, the theoretic values of the

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neurocybernetics of W. McCulloch and W. Pitts have received special methodological value. McCulloch's artificial (mathematical) neuron – Pitts allowed to describe the functioning of biological neurons using an artificial neural network capable of creative activity.

The scientific potential of cognitive musicology in Ukraine and the states of the post-Soviet space is constantly increasing, but despite this interpretation the concept of cognitivism in musicology and musical cultural studies is not defined. The contemporary Ukrainian musicologist O. Kozarenko wrote very figuratively about cognitive musicology. He considers that cognitive musicology is that manifestation of «wise musicology» ... which looks through the «infinite infinity» of phenomena, events, names, music, dates, dates, music the diastematics of a musical text is a miracle of a self-growing logo of a musical work, of the significant tensions that permeate it, cement it and form integrity» [1, p. 28]. The concept cognition, in our opinion, is directly related to music and performance and should be explored through the prism of the performing cognitive processes that provide it. In a broad sense, the term cognition means the act of formation of knowledge about an object / phenomenon, the object of cognition and the concepts associated with this knowledge, which is reflected in the thoughts and professional actions of musicians. Thus, cognition can be considered as the property of an object or phenomenon that is at reflection in the mind of a person requires refinement, reconstruction and/or establishment of appropriate relationships between its elements/parts. In musical performance musical text is both an object and a phenomenon characterized by cognition, which has a complex binary music-sound structure. That is in which object is the musical text and the phenomenon – the music-performing text, which is sound and which is a real piece of music, updated during the performance. In the most general sense cognitive (from Latin *cognitio* – cognition, study, awareness) is the ability of the musician-performer to sense and think and further professionally process the artistic information of the musical text as «energy information substrate of the world» (G. Kolomiets). In connection with the axiom of cognitivism, which is that «culture forms a person» and the individual always is under the influence of his culture, mental representations, symbols of culture, unobservable processes of consciousness and creative abilities of a person, which control the individual, must be explored within the framework of cognitive musicology not only as a performer of music, but aimed at gaining knowledge related to the thinking of performer musicians.

The development of the methodological foundations of the cognitive approach in the musicology of the performing arts, first of all, will allow to place new emphasis in understanding of the semantic structure of the performing process in the musical art. To consider the cognitive process of

performance in its various connections with cognition, social intelligence, experience, level of mental and emotional activity of the performer. However, the creation of a methodology for cognitive analysis of systemic phenomena in the plane of performance requires the development of a corresponding conceptual-categorical apparatus, which is able to reflect both system-functional processes and internal structural features of this activity. To analyze the music-performing cognitive process, we have identified the following instrumental narrow categories: interpretation – understanding meaning, reflecting the ideal processes of the functional system of thinking of the performer, and categories of performing language and speech, reflecting the material processes of sound formation of musical text, categories of musical means of expression, which are a kind of conceptual system of music-performance activity, which is realized in the learning process and then used more or less automatically according to the acquired experience, often corresponds to an intuitive feeling that is based on musical talent and is formed in the process of performing practice. These categories we understand – interpretation, in the general scientific sense, understanding as «psychological specificity of thought» (L. Vekker) and sense-formation, as a component of consciousness existing on the border of «psyche and culture» (V. Klochko), in a broad sense they can become an instrument for revealing the specificity of cognitive and practical (realization) functions of music-performing practice, and in a narrow one – a tool for theoretical reproduction and analysis of the system-functional process of performing a musical work.

The creative process of knowing and objectifying a piece of music in the process of performing, that is, providing a «life of sound» (L. Shapovalova) is due to the creative energy of the performer. Creative energy consists of the artistic feeling that we define by the concept of «emotional intelligence» (P. Salovey, John D. Mayer), which governs the cognitive intelligence, that is, the thinking of the musician. Indeed, from the point of view of empiricism, in music performance, feelings are controlled by the intellect because the musician thinks and simultaneously senses and realizes sensually colored sound material. Thus, «the smallest of the text and music fragments that has not only objectively defined meaning (motive, phrase, sentence, theme, etc.) for the performer, but also an emotionally determined figurative meaning, we call it a meaning-forming value structure» [2, p. 226]. The feelings themselves provide the artist's artistic attention to the individual semantic meaning structures of the musical text, which is necessary for the work of the intellect, which together with the emotion provides or does not ensure the adequacy of the musical text and sound movement in the actualization of the musical work. Thus, if musical text on the one hand is a form of alienation of a cultural product of a particular historical era – a piece of music from a composer, on

the other, it must be regarded as an object of the communicative and pragmatic orientation of the creative the activity of the performer musician to create a new music product in the realities of contemporary history for him and the listeners. Thus, musical texts, as real or potential sound phenomena, become a form of existence of music-performing culture, and at the same time, a way of preserving and transmitting multifaceted musically decorated artistic information about the spiritual and musical world of society, which is embodied in epoch-making musical texts and remains forever.

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METHODS OF ARTIFICIAL INTELLIGENCE IN THEORETICAL MUSICOLOGY: HISTORICAL AND CONTEMPORARY PROJECTIONS

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DOI: <https://doi.org/10.30525/978-9934-588-13-6-4>

Analyzing the problem of the impact of the latest computer technologies on the processes of development of the musicology's theoretical base, it is important to note that Ukraine is the birthplace of early developments in the field of music informatics.

Since the mid-1980's at the Kyiv State Conservatory named after P.I.Tchaikovsky operated a scientific laboratory. The specifics of its work was related to the problems of providing computer courses into the musical theoretical disciplines, in particular, the polyphony course, which initially looked like a terminology database, and in the future – expanded in terms of creating an algorithms' catalog of structural sequences in fugue exposures from the WTK by J.S. Bach. They were reserched by Doctor of Arts, Professor of the Kyiv State Conservatoire Igor Pyaskovsky. The idea of

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