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**VERBALIZATION OF AUDITORY THINKING AND ITS MOST
IMPORTANT MECHANISM – A THOUGHT EXPERIMENT**

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Abstract

The study of creative thinking, especially its non-verbal forms (auditory and visual), is an important scientific problem, the relevance of which is determined by the need to identify the mental operations used by the artist-creator to create musical works. The identification of these operational mechanisms in creative activity is an urgent need for modern philosophy, aesthetics and art history, because art – in particular, music – makes it possible to understand and feel the connection of times, the continuity of the development of human thought, the deep foundations of the culture of its time. It is at such times that the need arises to turn to different types of spiritual production in order to understand oneself and what is happening around. The search for the magical influence of music on a person has led to the conclusion that rational foundations lie at the heart of musical art – these are the operations of a thought experiment. There are various interpretations of the concept of “thought experiment”: from Ernst Mach's understanding of it as an experiment in the mind to understanding a thought experiment as an action with idealized objects in constructive activity. In the modern sense, a thought experiment is a multifaceted concept, a form of theoretical modeling, including constructive activity, operations with idealized constructs, schemes, and sound sequences. Thought experiment is a universal tool in scientific and artistic knowledge of the world. It is in this meaning that the article interprets and verbalizes the meaning of a thought experiment in auditory thinking.

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1. Introduction

The problem of thinking associated with creative activity in the context of standardization and unification of almost all aspects of human life is an important scientific problem in demand by the social conditions of modern civilization.

Along with the traditional understanding of thinking associated with the verbal mechanisms of the human psyche, in recent years, a scientific search in the field of non-verbal forms of thinking – in particular, visual and auditory – has been increasingly active. Paul de Man (1979) writes: “We continue to hear a lot about the non-verbal 'external' to which language refers, by which language is conditioned and through which it acts” (p. 63). The fact is that the study of these types of thinking can rationally explain the genesis, development and functioning of a number of socially significant processes and, moreover, makes it possible to develop sociocentric ideals that are necessary and demanded by Russian society.

The theory of verbal thinking is often unable to explain the specifics of the creative activity of an artist, sculptor, musician, where verbal explanations and comments are not of fundamental importance. The fact that these types of activities are the result of a certain mental activity is beyond doubt. Therefore, the study of the laws of productive creative thinking is a priority not only for philosophy, but also for psychology, sociology, art history. Thus, this study is interdisciplinary not only in the use of an extended methodology, but also according to the results of the study, which are important for the socio-philosophical analysis of public consciousness from the point of view of the creative mechanisms of its formation.

2. Problem Statement

When analyzing works of art, as a rule, the processes and operational mechanisms that initiated their creation remain outside the framework of aesthetics and philosophy of art. Derrida in his work “Fields of Philosophy” asserts that any ontology is verbal (Derrida, 1972). Therefore, the disclosure and verbalization of the operational mechanisms of creative activity is a necessary element of scientific research in the aesthetic sphere. In auditory thinking, practically no predetermined algorithms for future mental actions are explicated, although for their qualitative development, musical art and modern art science, of course, need to identify and study the mental processes of creative activity, philosophical understanding and verbalization of aesthetic processes. Rosa Subotnic (1994) speaks about the conditions for the constitution of musical being outside the logos. Particularly relevant in this regard is the search for rational foundations of musical aesthetic activity, the identification of the mechanisms of this activity and the finding of adequate ways to describe the aesthetic object from the point of view of a mental experiment. Since the speculative and experimental component of aesthetic activity is not always revealed to the recipient and they most often perceive only the results of creative searches, this type of thinking seems to be the most difficult to verbalize. Giorgio Sanguinetti (2012) proves that the theory of composition and musical pedagogy in the 17th–18th centuries in Italy was non-verbal. But the complexity of identifying and verbalizing the rational foundations of aesthetic activity does not yet give the right to assert the impossibility of detecting them or the fundamental absence of such, since the deeper we

penetrate the laboratory of creative processes, the more clearly the experimental-rational nature of musical activity is revealed.

For the disclosure of creative processes in music, the main thing is necessary: the identification of the operational mechanism with the help of which it becomes possible to create, to form a musical artifact, its most important aesthetic qualities, and to discover the logic of musical processes. Such a mechanism, in our opinion, is a thought experiment considered in the study as the most important mechanism of auditory thinking, musical creative activity, a mechanism for generating new knowledge. The identification and study of the mechanisms of thought experiment in music as one of the forms of non-verbal processing, storage, generation and transmission of information are of exceptional value, since many hidden, latent processes are the basis that in many respects forms not only public consciousness, but also the quality of our life. That is why the conceptual vision, philosophical substantiation and comprehension of the most general internal laws, origins and mechanisms of musical culture acquire special relevance.

3. Research Questions

The study examines the issues of extrapolating the mechanisms of thought experiment into music. The extrapolation of a thought experiment into music is justified as follows. First, a thought experiment is an operation of creative thinking. In classical music, the meaning of creativity is undeniable, therefore, the extrapolation of a thought experiment into music seems to be logically justified. Secondly, the art of music operates not with primordial, but artificially created constructions that are the result of abstraction. Music is always a second-nature artificial formation that has passed all levels of human subjectivity, consciousness and thinking. Third, idealized objects in a thought experiment undergo transformations and modifications. The study revealed the identity of the ways of transforming an idealized subject in mathematics and in music (Table 01), which also testifies to the theoretical level of a thought experiment in music and serves as the basis for its extrapolation into musical art. In this fact of the identity of the transformations of musical and mathematical idealized objects, it is necessary to see the Pythagorean roots, again manifested in the most unexpected way in the new European culture (Eggebrecht, 1977).

Table 1. The identity of the ways of transforming an idealized subject in mathematics and in music

Thought experiment operations in mathematics	Thought experiment operations in the art of music
1. Isolation of a constituent part of a geometric figure and its consideration as an independent one	1. Isolation of the motive from a theme and its consideration as an independent entity in a special section of the form - development
2. Quantitative transformation. Increase of a subject (to infinity)	2. Increase of the theme's polyphony (in a fugue), in reprises of sonata form by rhythmic changes
3. Decrease to a point	3. Decrease of the theme in fugues (acceleration of time)
4. Introduction of new elements (additional constructions)	4. Adding new elements in variations, creating a contrast between the main part and the side one (new); input of interludes with sequences in a fugue (the new element plays the role of a logical connection, transition to a new section of the form)
5. Strengthening the basic properties of the subject	5. Strengthening of the basic properties is achieved in the developmental sections of the form, for example, development. The contradiction (conflict) reaches its limit due to the transformation of the theme and its elements towards the intensification of its activity
6. Transformation of an object towards infinity with a transition to a new	6. Musical structures are organic in nature, in the development it is possible to reach a nodal point, the limit of emotional intensity, after

mathematical concept	which a logical transition to a new state follows
7. Idealization of an object, abstraction	7. An idealized subject (theme) is created by abstraction
8. Connection with logical categories	8. The musical literary text contains categories: discontinuity and continuity, stability and instability, changeability and immutability, quantity and quality, instantaneousness and duration, etc.
9. Geometric figures are model images, covering the whole (integral structural formations)	9. A piece of music is a model image that encompasses a holistic structural formation
10. Geometric figure is a visual construct	10. The musical theme in the musical text is a visual construct

The main question of the research was the question of finding an idealized subject in music. An idealized subject should express the main idea, the essence of the musical image and undergo changes and transformations. Langer (1950) writes: “In the study of music as a form of expression I came to the conclusion that music expresses the feelings as words express the ideas, rather than tears and laughter express emotions” (p. 534). An idealized object should not be just a sound shell, it should be fixed in a visual sign system that can be deciphered (decrypted). Rudolf Réti (1967) notes: “Each musical composition at a high structural level contains several motive cells from which it is formed. These cells do not have to be identical to specific motives” (p. 67). The study revealed that the analogue of an idealized subject in music is a musical theme formed in the classical musical art of the modern era. An idealized musical object allows working with it as a material object, opening up new opportunities for the development of musical art. Donald Davidson (1970) in his article “Mental Events” talks about the identity of mental and physical events: “Mental events are identical with physical events”. As a result of the transformations of the musical theme, dynamic musical forms and rhythmic structures are invented (Meyer & Cooper, 1963) that did not exist before the application of the operations of the thought experiment.

Equally important was the question of the correspondence between a scientific thought experiment and a musical thought experiment. Karol Krumhansl (1996) writes: “Music, in particular the Western tonal-harmonic style, is often described in terms of tension and discharge patterns. This tradition of musical analysis is related to the Gestalt theory in that they both rely on graphic methods” (p. 401). Visualization of musical constructions allows working with a musical theme both with a holistic education and with individual intonational elements of the theme. The most important condition for conducting a thought experiment is the creation of an idealized environment. The idealized environment in music is identified with the concept of an individualized musical form. An idealized environment is always concrete, individual, has a systemic nature and spatio-temporal parameters, it is created for each individual idealized object.

4. Purpose of the Study

The aim of the study is to:

- discover the rational mechanisms that constitute musical aesthetic activity;
- reveal the possibilities of a thought experiment in music as the most important operational mechanism of creative musical activity in modern times;
- identify the main functions of a thought experiment in the aesthetics of musical creativity;
- show the specifics of a thought experiment in music;

- substantiate the aesthetic significance of a thought experiment.

5. Research Methods

In his work, the researcher was guided by the methods of dialectical logic, phenomenology, the system-structural method, which considers a literary text as a sign system, general scientific research methods (abstraction, idealization, modeling, extrapolation), which made it possible to reveal the main immanent properties and signs of a thought experiment as an operational mechanism in classical music art. The theoretical basis of the research is the dialectical-materialist methodology, the laws of dialectics and the main provisions of the theory of knowledge. In the course of the work, the following categories of dialectics were used: general, particular, singular, essence and phenomenon, content and form, the principle of development, the principle of historicism. In addition, the work uses the principle of dialectical logic discovered by Hegel: the ascent of thought from the Abstract to the Concrete.

The methodological basis is the materialistic understanding of history and forms of social consciousness, including aesthetic consciousness. In solving the tasks, the researcher relied on the provisions on the dialectical unity of the material and spiritual sides of social life, as well as on the principle of the relative independence of social consciousness, which allows creating special socio-philosophical models of real processes of auditory thinking. Research methods suggest an integrated approach to this phenomenon. It is important to consider the origins of the formation of musical art as a result of auditory thinking, which will reveal essential connections and patterns in terms of the interaction of the creatively productive principle and society.

The following methodological foundations of the study were used:

- 1) methodology of philosophical dialectical analysis of the processes of social life in the field of aesthetic consciousness;
- 2) methodology of philosophical and aesthetic analysis;
- 3) methodology of musicological analysis;
- 4) methodology of cognitive psychology;
- 5) methodology of general scientific empirical and theoretical methods.

6. Findings

For the first time, the operations of a thought experiment were investigated in relation to musical art and considered as working mechanisms in the creation of works of classical musical art, which made it possible to reveal significant regularities in terms of the interaction of the creatively productive beginning and the existing level of culture. On the example of poetic art, the operations of a thought experiment – similar to the operations of a thought experiment in scientific research – were revealed, which confirms the presence of these mechanisms in any creative activity. The study revealed the conditions for the implementation of the operations of the thought experiment in relation to the art of music. It was proved that the basis of a thought experiment in music is the operation of abstraction and idealization, and its main stages are the creation of an idealized object, transformation and modification of an idealized object, as well as the creation of an idealized environment. It has been established that the logic of the movement

of a musical thought experiment obeys the dialectical principle of “movement from the Abstract to the Concrete” and all changes, the development are based largely on the logic of the musical theme itself. It has been proven on specific musical examples (Kulbizhekov, 2017) that all inventions and innovations of modern European music of the 17th century are the result of the work of a thought experiment. The identity of many operational mechanisms in scientific knowledge and in artistic creation has been established. The interdependence of the rational and sensory-organic components in the operations of a thought experiment in music was traced. In the construction of an artistic image, in the structuring of musical material, a fractal principle was revealed, the essence of which is the self-similarity of all levels of the musical text. Fractality emphasizes the connection between the musical form and the structure of natural formations. The study introduced the term “auditory conceptual image” (Kulbizhekov, 2017) as the result of all the operations of a thought experiment in music. The term "conceptual image" exists in epistemology and psychology, but in the work this definition is used for the first time in relation to the processes of musical mental experimentation.

7. Conclusion

The results obtained in the process of the research made it possible to comprehend the role of a thought experiment as a working mechanism of auditory thinking and to approach the problem of creating a musical text in a new way, identifying logical mechanisms that reveal the commonality of operations in music and scientific research. The study contributes to the development of theoretical provisions that allow explaining and interpreting various phenomena of aesthetic reality, promoting the integration of various spheres of knowledge: scientific, artistic and philosophical. In particular:

- to create a science-oriented paradigm for the explanation and interpretation of the aesthetic processes occurring in modern artistic practice;
- to structurize and classify the epistemological possibilities of the operational mechanism of a thought experiment to create an aesthetic object;
- to identify general trends in the process of integrating the scientific and artistic aspects in the cognition of the Universe;
- to initiate the emergence of a new research direction in the aesthetics and philosophy of music, associated with general scientific research methods within the framework of a thought experiment.

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