

ENERGETIC INTERACTIONS BETWEEN MUSICAL TEXT AND SOUND

ETUDE ON PHILOSOPHY OF MUSIC

BY **KRISTIAN ALEXANDER**

Summary

The definition of the nature of music was a matter of considerable interest to ancient Greek philosophers, where music occupied an important place in society as a basic part of its philosophy.

One of the most significant figures of ancient philosophy, astronomy and mathematics, Pythagoras, claimed to possess the capability to feel universal harmony, perceiving the common motion of the "celestial spheres"¹ as a result of the exclusive powers of his eyesight, his hearing and especially of his mind, which was out of reach for a great part of his contemporaries². Pythagoras's idea of common phonic (acoustic) harmony of the celestial spheres connects with the acoustical-mathematical principles of sound production, according to which every body, moving in space creates periodical condensations and rarefactions of the surrounding energetic layers, provoked by its own gravity and dynamic powers and also by its kinetic and potential energies. The inducted energetic concentrations and rarefactions provoke peculiar vibrations in the medium (space), which surround the moving body uniformly. These vibrations depend on the mass, compactness and speed of the motion. The vibrations arouse uniformly fading undulation, which in some cases would have provoked a feeling for a sound. The interactions between all bodies, stirring in the universe, create a summarized acoustical energetic product, which Pythagoras defines as a "*harmony of the celestial spheres*".

Similar ideas for the nature of music as a process and as an act in ancient Greece are reflected in treatises by Aristotle³, Plato⁴, and Heraclitus⁵. They all define music from

¹ Planet systems and star galaxies.

² Porphyries. *The life of Pythagoras*, V, 30, in: Diels, H. *Die Epochen der Vorsokratiker*.

³ Aristotle. *Works. For the sky*, II, 9, v. 3, 1981. *For the soul*, II, 7, v. 3, 1976. Institute of Philosophy, Moscow.

⁴ Plato, *Dialogues: "Symposium"*, 187a-187b and "*Phaedrus*", 186c-187b, Sofia, 1981; "*Tymey*", 35-36, Sofia,

the perspective of the naturalistic philosophy and aesthetics of their period. They explain the parallel correlations between micro- and macrocosmic structures, coexisting in a system of ambivalent relations between music and universe. This ambivalence defines the two-way interactions between the principles and regularities in musical art as a reflection of the communications between the elements of the mutually connected structures of the universe and the peculiar penetration of music into the cosmos as a result of non-subjective regularities in its structure.

In the eighteenth century, more than two thousand year later, Johannes Kepler⁶ makes a curious observation in relation to the planets and the Pythagorean system of spheres. He points out that the relations between the aphelia and perihelia⁷ of every planet, moving in elliptical orbit around the sun are equivalent to the fractions between the lengths of the strings of the Pythagorean monochord. These relations express the basic musical intervals in the musical system: 4/5 (a major third) for Saturn, 5/6 (a minor third) for Jupiter, 2/3 (a fifth) for Mars, 15/16 (a minor second) for the Earth, 24/25 (a sharp) for Venus and 5/12 (a minor decima) for Mercury.

In the twentieth century, the philosophy and theory of music manifested a particular interest in defining music as a concept and disclosing its nature. One of the basic problems of the twentieth century philosophy of music is directly linked to the analysis of the transformations of *definitive energetic concepts in music substance*⁸ in relation to the twentieth century philosophical schools of *energetism* as a kind of *physical idealism*⁹

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⁵ Heraclitus. *Letter to Herodotus*. in: Mullach, F. W. A. *Era gmenta philosophorum graecorum*. Parisiis, 1860-1881. Vol. 3. See Diels, H., *Die Era gmente der Vorsokratiker*. Griechisch und Deutsch. B., 1903. Diels, H. *Die Era gmenle der Vorsokratiker*. L., 1906. Special interest deserves the fragment indicated in: Marcovich, M. *Eraclito, frammenti*. Firenze, Biblioteca di studi superiori, LXIV, 1978.

⁶ German astronomer (1571-1630). He formulated three laws for the motion of the planets around the sun, based on the heliocentric model of the solar system and explained by the law of gravitation. He conducted a great number of researches in optical science, culminating in the invention of the telescope.

⁷ Respectively the most distant and the closest point to the sun from the elliptical orbit of every planet in the solar system.

⁸ Kurth, E. *Romantische Harmonik und ihre Krise in Wagners Tristan*. Berlin, Max HesseVerlag, 1923.

⁹ Philosophical trend, founded by the German philosopher and chemist *Wilhelm Ostwald (1853-1932)*. He conducted many researches in the domain of electronic dissociation theory, chemical kinetics, catalysis,

and of *intuitive vitalism*¹⁰ as a reflection of ancient *natural philosophy*, which defines the intuition as a basis of the artistic-creative process. The qualities of music can be presented as manifestations of *energetism* (according to Ostwald). In this case a sound contains simultaneous information for a definite musical tone with or without determinate height (pitch), length, and/or timbre. The energy of the acoustical process is very similar to physical energy with its kinetic and potential phases and characteristics. In the case of sound production, *kinetic* energy is the energy of directly moving acoustic waves with their internal forces and dynamics; *potential* energy is the energy of reflected concentration and tension, produced as a result of the motion. Every

methodology of the oxygenation of ammonia, etc. A Nobel Prize winner for chemistry (1909).

¹⁰ The creative work of one of the fundamental representatives of *intuitivism* and *vitalism* ("philosophy of life") *Henri Bergson* (1859-1941), French philosopher-idealist. A Nobel Prize winner for literature (1927). Bergson's philosophical concept was formed under the direct influence of French spiritualism founded by *Main de Biran*. Opponent of *mechanicalism* and of dogmatic rationalism, Bergson postulates an initially existing reality of life, interpreted as integrity, and as a radically different event from the substance and the spirit, which are only products of the disintegration of the vital process. The nature of life can be felt, experienced, and reached only with the help of the intuition, which is not opposed to knowledge of the subject but relies on the attainment in itself of life. Bergson suggests turning back to our own life of consciousness, which is given to every person. Introspection gives the opportunity to understand that the tissue of the psychical life is the continuation (Fr. *durée*), the continuous changes in the conditions, which imperceptibly pass from one to the other. The durability, which in fact means life, has not only spatial but a temporal character. This "quality" ("life") time is radically different from mechanical-physical time, which springs up as a result of artificially and conventionally determined duration. Bergson opposes the intellect to the intuition and defines them as an instrument for operating with "death things" – material or spatial objects. The concept of the intellect and the intuition is based on Bergson's metaphysical concept (theory for the evolution of the organic life.) According to this concept life is a metaphysical cosmic process, "vital impulse" (*plan vital*), powerful stream of the creative formulation and evolution; at the subsidence of tension life falls apart, transforming itself into substance. Man is a creative being, because he delivers the vital impulse. The ability to create is related to the irrational intuition, which is a "gift from God" and characterizes only a small part of humanity (similar ideas are supported also by *Schopenhauer*). Bergson maintains the thesis that creativity and culture have an elitist character, whereas society and morality are manifested in two basic forms: "closed" and "open". A "closed" society satisfies the requirements of social instinct, and sets as its basic aim the preservation of humankind: the individual is sacrificed in the benefit of the collective; truth is sacrificed to expediency. In an "open" society the individual person, creativeness, and the aesthetic, religious and ethical values enjoy top priority, including precedence over the interests of preservation and procreation of humankind. The opposition of reason to intuition transforms the act of philosophical cognition into an impossible task, since the contemplative aspect of "pure" intuition, without concrete conceptual differentiations, must remain inexpressible. Bergson's concepts exert a considerable influence on the foundation of William James' *pragmatism* and Arnold Toynbee's *personalism*, *existentialism* and *philosophy of history*.

sound is, therefore, energy in itself, although different in its nature and potential. In music, as in every acoustical event, sounds are organized in a precise manner and form macro-energetic substances (structures).

From an epistemological point of view, music can also be defined as a *semiotic structure* (system of *symbols*), which exists as a dynamic substance in a permanent relationship with other systems of symbols. This interaction is in a permanent state of constant discourse between these systems¹¹.

Music can also be defined as a *no qualitatively passing time*¹² with a basic inherent dynamic substantiality of all its products, because every musical creation is a carrier of an emotion. Music - in contrast to other arts (architecture, painting, sculpture, which offer a static, complete product) - expresses in a condensed state the vital *process* of events. Music is a temporal art, because its products are expressed in connection with a relatively determinate period, partially limited by the process of musical (re-)creation, which most of the time begins before and ends after the actual creation of the musical product: the energy concentrated to prepare the presentation of the product by its creator (author) and co-creators (performers) as well as the energy necessary to assimilate the product by its recipients (audience).

Finally, the substance of music can be defined as a direct expression of motion of *energy*, which is not related to time or space, is subjective in character, and relates to time and space as semantic concepts rather than to objectively existing structures.

2. Functional limits of the verbal symbol

The verbal symbol transmits the social-communicative significance of different objects or events. This symbol is, however, limited: it usually does not disclose information about the substance of these objects or events. Every symbol is constructed through a

¹¹ Schneider, M. *La nascita musicale del simbolo. Il significato della musica*. Milano, Rusconi libri, 1870. See Karanlacov, L. Symbol and music. Cultural-philosophical context and problems in the article of Marius Schneider "The birth of the symbol in music" and translation in magazine "Musical Horizons", Sofia, No. 8, 1986, pp. 54-82.

¹² Losev, A. The basic question of the music philosophy. In: "Philosophy, mythology, culture", Moscow, 1991, pp. 315-335.

complex system of different phonetic components forming syllables in morphemes and morphemes in semantic structures. Every morpheme contains a nucleus of potential energy, which in adequate conditions can be activated and delivered to a recipient. The verbal symbol acts as a material carrier of a specific meaning encoded through a process of digitalization of an object or event¹³.

3. Space and shape of the graphic symbols

The graphic shape of each phoneme represents a limitation of space and should, therefore, be treated as a bi-dimensional spatial figure, which contains a sublimated (or concentrated) energy as a result of the transitive transformation of the symbol from the level of an acoustical energetic structure to the level of a visual form.

The graphic representation of any symbolic structure included in a semantic system usually could reflect a summarized social and communicational convention. Thus, written letters could represent a specific coding (digitizing) of a more general concept. They also may represent the concentration and transformation of tri-dimensional acoustical energy (sound) in bi-dimensional (graphic) forms, which also contain a condensed potential (latent) energy that could be used to convert them back to sound.

4. Energetic interactions between graphical and acoustical structures

The energy of thought, verbal linguistic structures and their corresponding graphic bi-dimensional spatial forms can mutually transform each other, reflecting different levels

¹³ The interpretation of a verbal symbol depends on the emotional conception, gains different social-communicative applications and provokes different psychological, image-emotional and associative conditions in the consciousness of the recipient. Experiencing and rationalizing, both emotionally and psychologically, the semantics and the meaning of each word, as well as the overall conditions of subjective awareness at the moment of pronunciation, has since time immemorial been rationalized and applied in various ceremonial, ritual, magic, and conjuring acts, the power of which is due practically on the specific and considerably high degree of connection with the universe of their performer (achieved through various techniques and under the impact of specific external irritants of optical, acoustic, aromatic, chemical, and/or psychomotor nature) as well as on the particular state of her/his consciousness, adequately expressing or suggesting (through intonation, timbre, mimic, gestures and diverse corporal forms awaking complex interactions between various energetic structures) a specific emotion, idea or image.

of social and communicative conventions. Verbal symbols are usually more generalized than the respective mental (images or ideas) or expressive (emotions) structures they represent. They are also a digitized (coded) carrier of the subjective meaning concentrated in these structures. Similar processes of generalization are inherent to graphic symbols in relation to their interactions with verbal structures. Energetic transformations are permanently accomplished on three different levels (x -dimensional thoughts – *tri*-dimensional speech – *bi*-dimensional text), each of which possesses a progressively increasing degree of concreteness with respect to its inherent social and communicative meaning¹⁴.

Direct verbal social communications uses, besides an organized acoustical system, many other nonverbal symbols with conventional meaning that clarify or modify the character of communication, articulated by timbre, intonation, tempo, rhythm, agogics, accents, pauses, dynamics, diction, complex poly-variant lexical structures, facial expression, gestures, and additional visual information, accompanying and thus substantially concretizing the transmitted information, in contrast to the processes of decoding of graphic symbols, which is usually performed in considerably narrower semiotic frames¹⁵.

The psychological and emotional experience of semantic values and associative references, realized in parallel with the processes of decoding of subjective meaning concentrated in the (musical) text, activates the energy concentrated in it and provokes its transformation from material vibrations with low frequency of oscillation and high degree of concentration (*bi*-dimensional graphical forms or notational signs), in acoustical vibrations of highly organized energy (*tri*-dimensional sound).

¹⁴ This is why not every thought, feeling or state of consciousness can be described or reflected in a sufficiently accurate, thorough, and adequate manner by means of the socially generally accepted linguistic structures.

¹⁵ The indicated characteristics accompanying the direct verbal communication are *untypical* of the graphically registered semiotic structures.

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