



MUSIC AND MUSICOLOGY IN THE CONTEXT OF MODERN EPISTEMOLOGY

MUZICA ȘI MUZICOLOGIA ÎN CONTEXTUL EPISTEMOLOGIEI MODERNE

Ion GAGIM,

PhD, professor

Alecu Russo Bălți State University

Orice problemă trebuie tratată în contextul unui anumit sistem de referință. Sistemul în cauză poate fi diferit, în funcție de domeniul de cercetare (de exemplu, muzica în contextul filosofiei), de gradul de generalizare sau de nivelul sistemului (de exemplu, muzica în contextul noii paradigme a culturii sau a educației moderne) etc. În studiul ce urmează propunem o tratare a muzicii / muzicologiei în contextul noii teorii a cunoașterii științifice. Or arta sonoră se raportează la principiile epistemologiei moderne la modul direct. Pe de o parte, muzica conține în sine aceste principii conform naturii sale, pe de altă parte, aceste principii sunt generate de structura „muzicală” a universului (lumii): legile muzicii stau la baza a tot ce există, și invers, tot ce există își află reflectare în legile muzicii. „Lumea este o muzică”, „viața este o muzică”, „totul este muzică”, au afirmat gânditorii tuturor timpurilor. Muzica, grație sensului ei existențial pentru ființa umană, urmează a fi reconceptualizată din punctul de vedere al viziunilor (paradigmelor) științifice moderne asupra lumii, existenței, naturii, omului, conștiinței umane. Articolul în cauză este o încercare de acest gen. Conținutul lui are următoarea structură: I. Introducere. II. Noua paradigmă științifică. III. Principiile noii epistemologii și muzica. IV. Concluzii-recomandări.

The highest musicality in the sphere of thought...
(Niels Bohr)

Introduction

Any issue should be considered in the context of a definite system of coordinates. The given system can be different if correlated with some sphere of knowledge (for instance, music in the context of philosophy), with the degree of generalization or level of the given system (for instance, music in the context of the modern culture paradigm and modern education) etc.

In the given paper we offer to consider music in the context of modern epistemology, since it (music) absolutely correlates with the principles of the new theory of cog-

nitition.¹ On the one hand, music contains these principles in itself due to its nature, on the other hand they are engendered by the musical arrangement of the world: the music laws lie in the basis of the entire existence and, vice versa, the entire existence is contained in music. “The world is music”, “life is music”, “everything is music” – the wise men of all times asserted.

Music due to its existential meaning for a human being should be reconsidered from the point of view

¹ Further we state these principles, drawing parallel with the principles (laws) of music.

if the modern scientific approach to the world. Emil Cioran, touching upon the issue of music in its philosophic context, claimed: if the humanity has something to lose after the Renaissance, then it's music, since in the sphere of philosophy everything actually has been said by the ancient people – what can't be said about music.² Music isn't mere an art, it's a great manifestation of human spirit, it's the greatest of what a human being has been able to create. In case it is considered and mastered only on the level of esthetics (as something beautiful/enjoyable) the music may lose its age-old grandeur, its universality, i.e. what it represents for a person as spiritual being.

The new scientific paradigm

The modern world developed new views on the scientific theories, including on the structure of their paradigm. Science postulates grounded on the Cartesianity and classic physics have been fundamentally reinterpreted. The object of scientific interest essentially has become micro-universe that replaced macro-universe. The new, quantum physics was born (called also wave physics, i.e. "musical"), that gave rise to the quantum interpretation of the world, nature, life, consciousness, evolution. Many laws that were considered to lie immovably in the basis of the objective macro-universe proved to be ineffective in the quantum world. The human (social) world itself has become different. The new laws of the wave theory resulted in the revision of some laws of person's think-

² Cioran și muzica. București, Editura Humanitas, 1997.

ing, psychology. The modernism epoch was replaced by the post-modernism epoch that literally overturns the main principles of traditional culture.³ Everything has undergone fundamental changes, including person's consciousness, as well as his/her behavior, the essence of many kinds of his/her activity.

The theory of relativity and the quantum theory undermined the notion about Decartes' and Newton's world.⁴ The main foundation of classic physics has been destroyed – objectivity. The first discoveries of the new physics were connected mainly with the crisis of perception of the new world, and with the existential

³ The epistemology of postmodernism (J.-L. Moigne) includes three elements: *gnoseology* – what is the status of knowledge? (is it absolute or relative, internal or external in relation to a person; is it something given or "built" by a person), *methodology* – how is knowledge acquired by a person (is it transmitted or generated by him) and *ethics* – what is the purport, the value of knowledge (why do people need knowledge?).

⁴ The quantum physics has discovered a new level of reality with its new laws which deny (or at least restrict) the laws of traditional mechanistic theory – discontinuity, local causality, determinism, objectivism etc., which were replaced by: continuity, global causality, indeterminism, the necessity (and acceptance) of intuitive thinking (quantum physicists use such notions/methods as 'metaphor' etc. – B.Nicolescu. *Transdisciplinartatea*, Iași, 1999), feeling (the research experience), non-linear thinking, merging of subject and object, real and unreal, time and space, the transition from disciplinarity / inter-disciplinarity / poly-disciplinarity to trans-disciplinarity, holistic approach, synergy and other. Science operates today with these notions.

crisis as a whole. The discovery of subatomic reality required a new system of world view for its understanding. It turned out that there isn't one single reality: there exist several realities (or different levels of reality). Different level of reality presupposes different, adequate to it, method (level) of perception. At present when even physicists left behind the traditional model, it's time for other sciences to review (enlarge) their philosophy (methodological basis). It also has direct connection to the music science: musicology, musical esthetics, musical psychology etc. Musical science may not lag behind or keep aloof from taking part in the new global scientific process. It would result in its further marginalization, while it may get priority in revealing the hidden laws of world, human being, his/her consciousness.

The principles of new epistemology and music

The transition from Cartesianity and principles of classic physics, **from the mechanistic concept to the systemic (dynamic) interpretation** of nature, life, thinking, consciousness, evolution resulted in the understanding that **the world** isn't a machine consisting of separate elements, it is a single **harmonious, "living" organism**. The properties of the main matter models, subatomic particles can be comprehended only in the notions of motion, interaction and transformation. All said is also characteristic of music: it's a dynamic phenomenon. The essence of music as is known consists in numerous and heterogeneous forms of sounds movement rather than in sounds themselves.

Cognition on the quantum level includes in itself as inalienable/determining element a person-observer, his consciousness. The new physics established that the main structures of the material world are determined by the method we use to look at them: the observed matter models are the reflection of mental models. The Cartesian duality of body (matter) and soul (consciousness) disappears. We can never speak about nature (objective reality/thing) without speaking simultaneously about ourselves. No research can keep aloof from the impact of subjective values. This is the main principle in music: the content of musical composition isn't "objective entity", it is engendered by the consciousness (of a composer, performer, listener); hence the polysemy of its contents, plurality of performance variants etc.

Subatomic particles are not objects but correlations among objects. The transition from objects to correlations has great effect for science as a whole.⁵ Any object should be defined in correlation with other objects rather than by itself. On the subatomic level interrelations and interactions among the parts of the whole are more important than these parts themselves. "There's movement, but eventually there aren't objects in movement; there's action but there aren't its actors; there're no dancers, there's only the dance."⁶ We would add: there's music, there's

⁵ Gregory Bateson considers that correlations must make the basis for all definitions and this must be explained to children from school desk (Quote from: Capra F. *Momentul adevărului*. București, Editura Tehnică, p.81).

⁶ Capra F. The quoted ed., p.95.

performance – but there isn't a performer. The musical composition also is a dynamic network of interrelated events ("musical/sound ones").⁷ In music one should perceive relations among sounds rather than sounds themselves since they (relations) are meaningful units here. This is what is called intonation hearing (and performing) of music. Intonation in concentrated form contains in itself relations of different kinds: sound-pitch, meter-rhythm, stop/fret-harmony, dynamic, timbre etc. Hence its "impalpable", super-physical nature.⁸

⁷ In "The Musical Dictionary" published by me (Gagim I. *Dicționar de muzică*. Chișinău, „Știința”, 2008, p.73) we included the notion of "sound event", having defined it as metaphoric expression used in relation to the artistic image of the composition. Smooth or energetic flowing of melody, in ascending or descending direction, bright movements in middle voices or in bass, arising of dissonances and their transition in consonances, specific rhythmic figures (syncope and other), change of measure or tempo, timbre contrasts, modulations, articulation nuances etc., are peculiar "sound events", which in their development make the contents of composition, its dramaturgy.

⁸ Namely in connection with this property of musical intonation Dimitr Hristov in his monograph "The Theoretical Foundations of Melodies" («Теоретические основы мелодики», Moscow, 1980) points out that serious difficulties arise "at the attempt to penetrate into the melody world by means of scientific methods", which (melody) "conceals its regularities [...], stubbornly escaping from the nets of professional analysis" (p.11-12). On the level of intonation "hidden laws" operate.

Reductionism⁹ has been replaced by holism,¹⁰ which considers the world as a single whole, and singled out by us phenomena and objects as having meaning only in the composition of the whole. Holism is the attempt of using the experience of the right hemisphere in cognition, completing of the rational functions of the left thinking by non-linear and intuitive functions of the right thinking. The sphere of music (musical thinking) – the right hemisphere which grasps a phenomenon (object) in its entirety and indivisibility, it thinks in a polysemous, voluminous, systematic and polyphonic way. If the left hemisphere "speaks" then the right one "sings", if the left one "looks/sees" (in convex direction – outside) then the right one "listens to/hears" (in concave direction – inside) and so on.¹¹

Subatomic elements of matter are "polysemous" due to their nature, being perceived by a human being in dual aspect: as particles or as waves (depending on how we interpret them). On the subatomic

⁹ The notion that all aspects of complex phenomena can be understood through their reduction to component elements.

¹⁰ From old Greek ὅλος, - "whole, integral". The founder of modern holism J. Smats said sacramental phrases that the whole is more than the sum of its parts; and that the highest form of organic wholeness is a human personality. But much earlier Hippocrates said that a human being is "microcosm in macrocosm", and still earlier Lao-Tszy asserted that one can cognize the world without leaving one's own yard and so on.

¹¹ We examine this issue in the work "Psychological dimension of music" (Gagim I. *Dimensiunea psihologică a muzicii*. Iași. Timpul, 2003), p.99-103.

level hard elements/objects are transformed into vibrating models. In quantum mechanics phenomena are represented as probabilities and associated with values taking the form of waves and are identical to mathematical formulas used for describing of, for instance, vibrating cord of a guitar or of a sound wave.¹² In music the tone also has a dual form: as material particle and as “super-material ether”, as spiritual vibration. Music is simultaneously “nature” and – “super-nature”. The form of musical composition is also dual: form-scheme and form-process, also – form-text and form sounding¹³, also – theoretic form and psychological form¹⁴ and so on.

Establishing by the modern science of the identity between matter structure and thinking structure is accounted for by the fact that our consciousness plays fundamental role in the process of cognition (observation). The crucial feature of the quantum theory is understanding that a person is needed for generating the properties of subatomic processes rather than for mere observing these properties. In music there's analogical phenomenon: a human being not only observes from outside the movement of musical discourse, but also creates in his con-

sciousness its content.¹⁵ (this is essentially constructivism – another thesis of the modern science). “An electron has no objective properties outside my consciousness”, the quantum physics postulates. The same occurs with musical image.

Subatomic particles (dynamic models) are presented at the same time as energetic “packets”. In music sound, motive, grain-into-nation etc. are “energy packets”.¹⁶ Dynamic models build definite stable structures which form material substance on the macroscopic level. By analogy in music the given macroscopic substance is a composition form.¹⁷

The forces of attraction and repulsion interact among subatomic particles. The given process is difficult to visualize as physicists say but it is utterly necessary for understanding subatomic phenomena. The analogy in music is stop/fret (with its internal-sound gravitation processes: stable and unstable sounds), which cannot be depicted-visualized in text (as scales for example), it only can be sung, played, sounded. In general, stop/fret is presented as micro-model of the Universe: in the

¹² Capra Fr. *Momentul adevărului* (The Turning Point). București, Editura Tehnică, 2004.

¹³ We explain these two kinds of musical form in “The Introduction into Dynamic Musicology”, Balti State University, 2007, Scientific library (in manuscript).

¹⁴ We examine these two kinds of musical form in the work “Psychological dimension of music” (see above).

¹⁵ We draw your attention to the linguistic similarity of the notions “image” and “imagination” (=entering the image). The image appears and is created in imagination and only there.

¹⁶ Though musical tone in itself is “energetic unit”. *Tone* from Gr. “tonos” and Lat. “tendo” means straining, tension. In other words *tone* is “energy”, physical-physiological and psycho-spiritual. Hence *intonation* = in + tone – “entering tone”. To intone means to enter tone energy.

¹⁷ We remind that interpretation of music as sound-psyche energy was the object of study by Ernst Kurth in the 1920s.

center there's tonic (the sun) around which the rest of its elements ("planets") "are turning" (by the gravitation laws).

Another principle of world arrangement is holographic: the whole is coded in each of its parts. Sound is a hologram of the universe.¹⁸ A musical sound is a hologram of music: it comprises (in a hidden and concentrated form) music's main elements: melody (sound-pitch), harmony (overtones), stop/fret (gravitation field between overtones), rhythm (movement-pulsation), form (stretch-length of sound), timbre (sound color), dynamics (sound power) etc.

In order to express dynamic nature of reality David Bohm formulated (by analogy with hologram) the notion of **Holomovement**¹⁹ to study movement structures rather than object structures. The well-known fundamental thesis in musicology: the essence of music is movement. The essential in music isn't "structures" but their movement in time.²⁰ Hence the main notions of musical content (image): "formation", "development", "dramaturgy".

Modern physics characterizes matter as "uninterrupted energy dance" with certain rhythmic models rather than something passive and inert. **A conceptual transition from**

¹⁸ The world is the matter in movement. And each movement produces vibration (sounding). Hence, without vibration (without sound) there's no matter. Sound as fundamental phenomenon is an integral element of the universe containing in itself the main properties of the latter.

¹⁹ Bohm David. *Quantum Theory*. New York: Prentice Hall, 1951.

²⁰ In this sense E. Hanslick is right claiming that music is "sound forms in movement".

structure to rhythm occurs in the new science. The notion of rhythm plays a fundamental role in the development of a new holistic view of the world. Processes and stability are compatible only in case they produce rhythmic models – fluctuations, oscillations, vibrations, waves. The expression of a person's individuality also has in its basis rhythmic formulas: speech, body movements, gestures, breathing etc.²¹ Different rhythmic models are the expression of the same main rhythm: internal hidden pulse.²² The fundamental role of rhythm covers both perception and sensor communication: when we look at some object our brain transforms light vibrations into rhythmic pulsations of neurons. Analogical transformations occur also at auditory perception.²³ The surrounding reality represents an uninterrupted dance, and our sensations transform some of its vibrations into frequency models which are processed by brain. Rhythm is the fundamental element

²¹ It is established that human organism functions on the basis of over 300 rhythms (Volkov Iu., Polikarpov V. *A human being. Encyclopedic dictionary.* (Человек. Энциклопедический словарь.) Moscow, Gardariki, 1999).

²² Leonard George. *The Silent Pulse*. New York: Bantam, 1981.

²³ Rhythm also plays an important role in different kinds of interpersonal communication. Each conversation is a subtle rhythm (mostly invisible) based on synchronizing of the partners' micro-movements. A complex synchronization occurs between a baby and mother (we remind also of the role of a lullaby) and also between lovers. On the other hand, antipathy, opposition and lack of harmony appear when the partners' rhythms aren't synchronized.

of music. Here it is manifested in different forms and on a different level of the musical tissue structure (of a composition): from the rhythm of initial tune to compositional rhythm (on the level of the whole composition).²⁴

The new (systemic) biology proves that fluctuations are crucial for the dynamics of organisms' self-organization. They constitute the base of order in the living world: organized **structures are born from rhythmic models**. Denis Noble in his book "The Music of Life. Biology beyond the Genome" compares an organism with "an orchestra without a conductor".²⁵ An organism grows, develops, is formed in time, the same as musical composition. Music and a living organism have the same principles of forming and functioning.

Following the example of quantum physics and systemic biology **modern psychology switches its attention on the transition from psychological structures to processes** which lie in their basis. Many psychologists and psycho-therapists proceed from mental dynamics in the notions of energy stream (from feelings, experience rather than reasonable thinking). Movement, dynamics, constant transition of one states (processes) into other is the

²⁴ See for example: Nazaykinskyi E. *The logic of musical composition*. (Логика музыкальной композиции.) Moscow, Muzyka, 1982.

²⁵ Noble Denis. *The Music of Life. Biology beyond the Genome*. 2006. Earlier (1993) Noble wrote a book entitled "Logic of life" but in the new book he replaced the word "logic" by the word "music" as he thought that an organism functions and develops according to music laws rather than logic ones.

nature of psychics. Psychics isn't "a mechanism", "an apparatus", "a scheme", "a structure" (Cartesianity), but it is "a living system", "an organism", "a phenomenon in time movement", it isn't "a fact", it's "an act" ("process-event"), it isn't "a moment" "outcome/conclusion", it's "movement-formation" (Heidegger, Bergson),²⁶ psychic processes are "as melody", Merleau-Ponty states.²⁷ The psychics functions in the basis of "rhythmic-dynamic principle". There's direct evidence of similarity of psychics and music.²⁸ In connection with the necessity of understanding new phenomena, **an increased interest for the studying of the right hemisphere of brain** arose which possesses characteristics necessary for understanding these phenomena. Musical thinking is also thinking-process, it isn't thinking-screen, it's thinking-movement, but it isn't thinking-"outcome/ conclusion".²⁹ It is the thinking of the right hemisphere whose characteristic properties are syncretism, synchrony, parallelism, continuity, polysemy, non-linearity,

²⁶ Bergson Henri. *Eseu despre datele imediate ale conștiinței*. Iași, Polirom, 1998.

²⁷ Merleau-Ponty Maurice. *Phenomenologie de la perception*. Paris, Gallimard, 1971.

²⁸ Hence its priority role in making impact on a person (among other arts and phenomena).

²⁹ Listening to a symphony for example we are not interested in its ending ("final conclusion/outcome"), we are interested in the flowing-movement of its discourse, in the perception of living process-content.

holism, heuristics, holography, polyphony etc.³⁰⁻³¹

Conclusion

The above said brings about the necessity of studying music from the positions of the modern epistemology at least in the following perspective directions:

- **Philosophic**, in the sense of interpreting music as a special *sounding philosophy*, as *auditory (and temporal) hermeneutics*, as *sound (auditory) semantics*, as *specific musical cognition*.³²

³⁰ We study this issue in the work "Psychological Dimension of Music" (see above), p.244-252.

³¹ Why can we sing polyphonic but can't speak polyphonic? Because singing (music) is the right-side thinking, and speech is the left-side thinking (diachronic, monosemantic) etc.

³² In this sense the scientific conference entitled "Sounding philosophy" («Звучащая философия») is symbolic (The collection of materials. SPb.: Saint-Petersburg philosophic society, 2003), where the similar problem has been raised. (see some reports: M.P.Zobova. *Does philosophy sound today? (Звучит ли сегодня философия?)* p.88-91; T.A.Akindinova. "Sounding philosophy": about movement tendencies in historical time («Звучащая философия»: о тенденциях движения в историческом времени), p.5-8; A.S.Kluiev. *Music as sounding philosophy (Музыка как звучащая философия)*, p.99-100; A.K.Sekatskiy. *The score of inaudible music (Партитура неслышимой музыки)*, p.160-178 etc. But this is only one of attempts. It's necessary to move further in this direction. The necessity of studying music in philosophic perspective has been mentioned in the magazine "Soviet music" («Советская музыка»)

- **Musicological**, in the sense of developing new directions: 1) *Dynamic (or functional) musicology* (where aspects and elements of music will be revealed in their "living" form, in their numerous and various interrelations, interconnections and mutual influences with their role/function of communicating a certain message; in music each element "speaks", addresses to the listener, invites him to a peculiar "dialogue" (in the sense that music is directed to perception) and so on.³³ 2) *Sound (auditory) musicology*, with emphasis

in 1988-1989 during discussion of the problem "Musical science: What kind of science must it be nowadays?" Participants of the discussion came to the conclusion that the future music science will be *philosophy of music*. "Musicology positions itself today not only as science. Philosophic notes are obviously heard in it." (V.Medushevskiy). For musicology today "philosophy is especially important. I'd even predict the actuality of developing *philosophy of musical analysis*" (I.Zemtsovskiy). (Quote by: Kluiev A.S. *The Future of Musicology (Будущее музыкознания)*. In: Methodology of humanitarian knowledge in the perspective of 21st century. The materials of the international scientific conference. 18 May, 2001. Saint-Petersburg. Series "Symposium". Issue No.12. SPb.: Saint-Petersburg philosophic society, 2001, p.294-296).

³³ See the works of B.Asafiev "About directionality of forms in Chaikovskiy's compositions" («О направленности форм у Чайковского») (Selected works – M: AS USSR, 1954, v.2, p.64-70), "Composer-playwright P.I.Chaikovskiy" («Композитор-драматург П.И.Чайковский») (Ibid., p.57-63) and other.

on “auditory” (besides visual, by score) research of music. One method of this direction can become *an auditory analysis* of a composition.³⁴ The necessity of further development of musicology in its new directions remains topical/actual.³⁵

- **Pedagogical**, in the sense of developing new direction – *pedagogics of hearing* (besides pedagogics of eye whose vector traditionally is followed by the sci-

³⁴ In my work mentioned above “Musical dictionary” we’ve included the given notion offering one of several variants of its definition (p.20). In this connection we’d mention the notions of B.Asafiev “observing music” and “finding music”.

³⁵ Though the issue has been raised before. “The problem of perspective of the musicology development was raised in national science about music long ago, A.S.Kluiev writes, but it was brought into the limelight in 1988-1989 in connection with discussion in the magazine “Soviet music” of the issue: “Musical science: What kind of science must it be today?” (“Soviet music”, 1988 – No.11, p.83-91; 1989 – No.1 p.71-77; No.2 p.38-43; No.5 p.82-89; No.8 p.48-54). The participants of discussion agreed that the future musicology must become a kind of generalized theory of music comprising theoretical, historical, psychological and other knowledge about musical art. V.Medushevskiy: In science “the interest has appeared now not so much to separate disciplines but to the whole picture of music arrangement and its role in modern situation”. M.Mughinshtein: “On the threshold of the 21st century the contours of some synthetic musicology are looming in the horizon, where science wonderfully merges with art, and art element merges with the element of life itself!” (Kluiev A.S. The quoted edition).

ence of education).³⁶ It is also possible to renew (to further develop) principles and methods of musical education formulating the main task (theme) of its research where the main object isn’t “Music” but “I and Music”. This fundamentally changes *the methodology of its teaching and learning*.

- **General scientific**, in the sense of inter-, poly-, trans-disciplinary perspective and mutually advantageous research – on the border (in union) with other sciences: philosophy (theory of cognition, metaphysics etc.), psychology (study of psychics/consciousness/properties of the right hemisphere etc.), pedagogics (development of “the right-side thinking”: intuitive, non-linear, holistic, heuristic, holographic, polyphonic etc. which is necessary today as has been mentioned already;³⁷ using the possibilities of music/child’s musical experience in developing of a person’s general qualities through his “musicalization” in broad and not only specific word meaning).

³⁶ We study the issue of “pedagogics of hearing” and its essence in: Gagim I. *Music as great pedagogics (Музыка как великая педагогика)* // Musical-pedagogic education on the boundary of 20th and 21st centuries”. Materials of VIII International conference. Moscow, MPGU, 2004, p.146-153.

³⁷ Nowadays the necessity of development of non-traditional thinking means, of new logics is increasingly emphasized (see for example the works of Eduard de Bono where the author offers different means of developing “parallel”, “non-standard”, “lateral” thinking, “water logic” etc.). (<http://www.debono.ru>)

The given approach to music will place the musical science in the line of advanced sciences and music will acquire its real role

for a modern person in the matter of cognition and transformation by him/her of the objective world and finally of himself/herself.

Bibliography

1. Bergson Henri. Eseu despre datele imediate ale conștiinței / Bergson H. - Iași: Polirom, 1998.
2. Bohm David. Quantum Theory / Bohm D. – New York: Prentice Hall, 1951.
3. Capra Fritjof. Momentul adevărului / Capra F. – București: Tehnică, 2004.
4. Gagim Ion. Dicționar de muzică / Gagim I. – Chișinău: Știința, 2008.
5. Gagim Ion. Dimensiunea psihologică a muzicii / Gagim I. – Iași: Timpul, 2003.
6. Leonard George. The Silent Pulse / Leonard G. – New York: Bantam, 1981.
7. Merleu-Ponty Maurice. Phenomenologie de la perception / Merleu-Ponty M. – Paris: Gallimard, 1971.
8. Nicolescu Basarab. Transdisciplinaritatea / Nicolescu B. – Iași: Polirom, 1999.
9. Звучащая философия. Сборник материалов. СПб.: Санкт-Петербургское философское общество, 2003.
10. Клюев А.С. Будущее музыкознания // Методология гуманитарного знания в перспективе XXI века. Материалы международной научной конференции. Серия "Symposium". Выпуск № 12. СПб.: Санкт-Петербургское философское общество, 2001. с. 294-296.
11. Медушевский В.В. Интонационная форма музыки / Медушевский В.В. – Москва: Композитор, 1993.
12. Назайкинский Евгений. Логика музыкальной композиции / Назайкинский Е. – Москва: Музыка, 1982.
13. Христов Димитр. Теоретические основы мелодики / Христов Д. – Москва: Музыка. 1980.



Srigățul
Anastasia RACIUC