REFERENCES

1. Aranovsky, M. (2004). Music is an endless phenomenon... Academy of Music. (Vols. 1), (pp. 31–35) [in Russian]
2. Asafiev, B. (1963). Musical form as a process. Leningrad: Music [in Russian]..
3. Herzman, E. (1986). Antique musical thinking. V. S. Burenko (Ed.). Leningrad: Music [in Russian].
4. Zavgorodnaya, G. F. (2012). Polyphonic foundations of modern composer creativity. Analytical essays. Odessa: Astroprint [in Ukrainian].
5. Zaderatsky, V. (1999). The semantic field of music in the past and present. Problems of national cultures at the turn of the third millennium. (pp. 5–19). Minsk: BelIPK [in Belarus]
6. Honegger, A. (1972). Second Symphony: score. Moscow [in Russian]
7. Honegger, A. (1970). Fifth Symphony: score. Moscow [in Russian]
8. Samoilenko, A. (2002). Musicology and methodology of humanitarian knowledge. The problem of dialogue. Odessa: Astroprint, [in Ukrainian].
9. Samoilenko, A. I. (2002). Genre-style as a pair category of musical culturology. Kiev: Naukoviy svit [in Ukrainian].
10. Shostakovich, D. (1955). Tenth Symphony: score. Moscow [in Russian]

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TO THE PROBLEM OF MUSICAL THINKING: FROM THINKING ON AN INSTRUMENT TO THINKING WITH AN INSTRUMENT

The purpose of the work. *The article explores the conditions and factors of the formation of musical and instrumental thinking and its influence on the general principles of musical cognitology.* ***The methodology*** *of research consists in the application of logical-semantic, historical-cultural, organizational, generalizing and musicological methods in their systemic unity.* ***The scientific novelty*** *of the work is to identify a specific algorithm for the development of musical thinking in the aspect of the specificity of instrumentalism, in particular in the movement from «thinking on an instrument» to «thinking on an instrument» in the context of the supersymbolic culture of the modern information society.* ***Conclusions***. *It*

is proved that a musical instrument acts not only as an instrument for expressing a musical idea, but also as a thinking instrument for an instrumental musician and composer who owns an instrument (or relies on the sound absorption of a like-minded instrumentalist). Deepening the instrumentalization of composers, the absolutization of timbre with the semantization of specific «untranslatable» textural formulas in the search for a new sound, the strengthening of the role of the executive factor contribute to the birth of a new stage of thinking with sounds — thinking with an instrument, when the latter «tells» the composer the direction of figurative and intonational and dramatic development.

Keywords: *musical thinking, instrumental performance, musical and instrumental thinking, thinking on an instrument, thinking with an instrument, musical and instrumental means, spatiality in music.*

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До проблеми музичного мислення: від мислення на інструменті до мислення інструментом

Мета роботи*. У статті досліджуються умови та чинники формування музично-інструментального мислення та його впливу на загальні принципи музичної когнітології.* ***Методологія д****ослідження полягає в застосуванні логіко-семантичного, історико-культурологічного, органологічного, узагальнюючого, музикознавчого методів у їх системній єдності.* ***Наукова новизна*** *роботи полягає у виявленні певного алгоритму розвитку музичного мислення в аспекті специфіки інструменталізму, зокрема у русі від «мислення на інструменті» до «мислення інструментом» в умовах надсимволічної культури інформаційного суспільства сучасності.* ***Висновки.*** *Доводиться, що музичний інструмент виступає не тільки знаряддям для вираження музичної ідеї, а й знаряддям мислення музиканта-інструменталіста і композитора, який володіє інструментом (або покладається на звуковтілення інструменталіста-однодумця). Поглиблення інструменталізації композиторських засобів, абсолютизація тембральності з семантизацією специфічних фактурних формул, що «не перекладаються», в рамках пошуку нового звуку, посилення ролі виконавського чинника сприяють народженню нової стадії мислення звуками — мислення інструментом, коли останній «підказує» композиторові напрям образно-інтонаційного та драматургічного розвитку.*

Ключові слова: *музичне мислення, інструментальне виконавство, музично-інструментальне мислення, мислення на інструменті, мислення інструментом, музично-інструментальні засоби, просторовість у музиці.*

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К проблеме музыкального мышления: от мышления на инструменте к мышлению инструментом

Цель работы. *В статье исследуются условия и факторы формирования музыкально-инструментального мышления и его влияния на общие принципы музыкальной когнитологии.* ***Методология исследования*** *заключается в применении логико-семантического, историко-культурологического, органологического, обобщающего, музыковедческих методов в их системном единстве.* ***Научная новизна*** *работы заключается в выявлении определенного алгоритма развития музыкального мышления в аспекте специфики инструментализма, в частности в движении от «мышления на инструменте» до «мышления инструментом» в условиях сверхсимволической культуры информационного общества современности.* ***Выводы.*** *Доказывается, что музыкальный инструмент выступает не только орудием для выражения музыкальной идеи, но и орудием мышления музыканта-инструменталиста и композитора, который владеет инструментом (или полагается на звуковоплощение инструменталиста-единомышленника). Углубление инструментализации композиторских средств, абсолютизация тембральности с семантизацией специфических «непереводимых» фактурных формул в рамках поиска нового звука, усиление роли исполнительного фактора способствуют рождению новой стадии мышления звуками — мышления инструментом, когда последний «подсказывает» композитору направление образно-интонационного и драматургического развития.*

Ключевые слова: *музыкальное мышление, инструментальное исполнительство, музыкально-инструментальное мышление, мышление на инструменте, мышление инструментом, музыкально-инструментальные средства, пространственность в музыке.*

Relevance of the research topic. Since the last third of the XX century, the concept of «musical thinking» has firmly settled in both the narrower branches of the music disciplines of different countries and in the relatively broad aspect of the study of music (philosophy, culture, aesthetics, psychology, etc.). Actually, the difficulty in studying musical thinking is that the study of it as a whole, as well as its components requires a comprehensive approach, the use of various techniques developed by different sciences. But within the framework of this article we are interested not so much in theoretical and philosophical elaboration of the concept and essence of musical thinking, but in its aspects related, first of all, to the performance position of the musician («the musician» according to I. Zemtsovskyi [10, p. 97]),

secondly, with the specificity of musical instrumental creativity. This formulation of the question, by re-emphasizing «from the musical language to the Musician» [ibid.]. At the same time the essence of musical art in its real being takes a more general position and embodies the specifics of a narrower category of musical instrumental thinking. This perspective represents the current direction of musicological research of the present, considering the role of musical instrumentalism in the musical culture of the late XX — early XXI centuries.

The purpose of this article is to investigate the conditions and factors of the formation of musical and instrumental thinking in its movement from «thinking on instrument» to «thinking with instrument».

Presenting the main material. «Music manifests itself as a language, as a sphere of expression of feelings and as thinking,» — wrote B. Asafiev [3, p. 203]. Indeed, the concept of «musical thinking» is widely used in philosophical, aesthetic, musicological, cultural, psychological and pedagogical studies. Musical thinking «must be studied simultaneously from three points of view: as an example of revealing the general patterns of any human thinking, as one of the types of artistic thinking, and as a manifestation of the specific properties of musical thinking,» — said B. Asafiev [ibid]. Add to these factors the ones specific to the instrumental play-thinking. After all, if «at the early stage of the development of European music (new era) its sound was concentrated around the human voice, then a wider range of musical instruments later joins» [6, p. 70], which had its effect as specific and general characteristics of musical thinking. Thus, the wide expansion of instrumental music from the XVIII century, the fusion of its everyday genres (with a predominant accent metric) with concert music, the modernization of instruments, the formation of tone-modulation development and homophony — form a practical and thinking ground for the embodiment of sonata and symphonic instrumental formulas, new techniques and expressiveness. In the XX century, the search for a new sound led to its invention, «constructing» directly on the instrument, putting forward specific («untranslated» [18]) textural and timber formulas as figurative and semantic parameters of a particular kind of instrumental creativity (vocal sound in this respect demonstrates more limited capabilities by expanding its toolbox of expressive tools through tooling). The importance of the performing factor (improvisational, aleatory compositions; steady composer-performer tandems to find new sounds on a particular instrument) is increasing. Instrumental techniques and tools have become able to «suggest» the composer's new figurative and semantic parameters.

As a category of musicology, the term «musical thinking» has received the most active treatment since the last decades of the XX century. The concept of «musical thinking» reflects the important aspects of the activities of all participants in the Asafiev triad — composer, performer, and listener. Common opinion can be considered as the lack of unity among researchers of the views on the essence of musical thinking, even — «reading». Today, intonational and figurative (V. Medushevskyi), artistic and figurative (N. Antonets), figurative and musical (B. Asafiev), musical and creative (B. Yavorskyi), performing (numerous works of performers, first of all — instrumentalists) live in scientific developments. Finally, musical and instrumental (works of the author of the article), more narrow is the piano-performing [9] thinking. The term «musical thinking» is used most commonly (M. Aranovskyi, M. Bonfeld, G. Elistratova, O. Malinovskaya, V. Moskalenko, V. Ozerov, O. Samoilenko, A. Sohor, Y. Tyulin, V. Kholopova, Y. Kholopov, B. Yavorskyi and others). As a rule, musical thinking is understood as a part of a more general concept of «musical consciousness». According to M. Aranovskyi, musical consciousness is the ability to think musically, that is, to form certain musical-sound constructions and to give them an appropriate meaningful interpretation [12, p. 59].

In fact, the creation of a work of art (or its execution) is, in particular, a constant work of thinking, «aimed at the selection of certain components of the design and its realization (the situation of choice covers not only material and its consistent deployment-development, but, of course, also the very logical principles of this development)» [6, p. 12]. At the same time, one of the main, dominant factors in determining the availability of musical abilities, according to B. Teplov, is the ability to feel, deep experience in the act of musical communication, as well as in professional musical activity. And K. Gedel proved the presence of «irreducible incompleteness» in any logically consistent closed system, testifies to the breadth of human thinking that goes beyond the discursive-logical, verbalizable form [6, p. 17]. It is this circumstance that enables productive creative thinking as such. Psychologists acknowledge that the role of such non-verbalizable information transmitted, for example, in interpersonal communication through opto-kinetic system (gestures, facial expressions), para- and extralinguistic factors (intonation, pauses, etc.), the system «eye contact», it often proves to be much more important for communication, its comprehension and its conclusions than actual verbal-language dialogue. In the communicative act of musical performance, the dialogue of the performer and the listener, such non-verbal information, the activities of non-verbal intelligence play almost

decisive role: both participants of the dialogue will prefer a full-time, live form of communication playing in an empty hall or recording. Moreover, the listener is more likely to point out the artistically brighter (in the act of «non-verbal communication») performer. Such meaningful non-verbal information, saturated with certain content, can serve as a stimulus not only for emotional, but also for thinking and intellectual activity.

M. Aranovskyi proposes to solve the difficult situation in the science of the definition of mental activity in general (which complicates the problem of musical thinking) through the rejection of «dogmatic approaches to thinking» and the invention of «bypass» ways, which he sees in the liberation from the «sphere of concepts and rules of logic, putting it [thinking. — *A. C.*] depending on the type of operands and communication channel» [12, p. 5]. The author argues that «thinking can take place outside of words and concepts, relying only (or predominantly) on the material to which a particular activity is related». The contradiction about the «absurdity of the exclusion of music from the sphere of intellectual activity» and at the same time the «inability to explain it as such in terms of operating conceptual range and logic» is resolved, given that «human thought is capable of operating in any objects and any objects.... not only real, but also created by fantasy. It can exert space and time... physical and abstract. It takes place both in the real and in the ideal world» [12, p. 21]. Boldly encroaching on «the holy of holy nature of thinking, that is, its traditional, positivist in essence, conceptual and logical concept», M. Aranovskyi calls the practice of «musical creativity, which consists in making decisions concerning the formation of a musical text» by musical thinking. The very possibility of musical creativity is realized only by «close interaction, mutual compensation and mutual assistance» of two different creative mechanisms, «one of which relies on the conscious performance of mental operations, and the other works latently,» in the darkness of the unconscious» [12, p. 43]. The art of «pure», instrumental music in this respect most clearly demonstrates the positions stated by the researcher, depriving themselves of the conceptually logical verbal instrumentation of the formation of musical sense, operating «pure meanings» Such «pure meanings» nevertheless materialize (for self-expression and communication) which one develops and unfolds like a thought-feeling (in the continuous motion of «living matter»), which is difficult (and often impossible) to reproduce in verbal concepts. But music «thinks of everything in its own way, creating new categorical series, new imaginative guidelines» [9, p. 43]. The reproduction of life and philosophical meanings in music is based on its intonational and artistic nature, which reflects not

so much individual phenomena as the processes of their mutual influence, transformation, meaningful functioning in systemic integrity. This «sound content» thinking is self-sufficient, not subject to direct translation.

M. Bonfeld comes to similar with Aranovskyi's conclusions, who considers music, including as «an element of a wider system — human mental activity» [6, p. 3], while at the same time preventing the identification of musical-thinking processes and musical activity as a whole, since «musical activity is not only thinking, which is very clearly manifested in connection with music-making (creation and performance of music)... music, in particular, is a spiritual and practical activity in which everything that is connected with thinking — an ideal, psychologically active process that takes place in the mind (subconscious) of the creator or performer — is combined with the materialization of these processes — that is, work purely practical beyond mental activity» [6, p. 8]. Such materialization on the instrument (especially polyphonic, but not only) allows, unlike vocal sound, to clearly visualize the spatial factor of musical thinking.

O. Sokolov points to the impossibility of the existence of separate elements of musical language, means of musical expressiveness over time and space, even in the composer's imagination [14, p. 153]. After all, these tools require structural certainty in their implementation in sound musical fabric, especially polyphonic. A. Sohor, considering the meaning of the concept of musical thinking (which is the unity of such basic activities as reflection, creation and communication), introduces a psychological category as activity [15, p. 64]. Later, while considering musical thinking in relation to activity, I. Lyashenko understands the process of transforming sound reality into an artistic image [11]. It is an indispensable condition for musical thinking that penetrates into the figurative and semantic context of intonation, while simultaneously understanding the logical organization of sound structures. In the spatial representation of sound material, musical instruments prove to be the most substantive, orchestrated base. Kurt's idea of the multiplicity of spaces that are associated with music inevitably includes the touching aspect that develops, above all, from the experience of playing instruments [20, p. 135–136]. No wonder the accompaniment of the vocals was once instrumental. First of all, the strings, which did not cover the verbal expression with delicate sounds, but supported the voice, helping it to stay in the right field and probably served as a reference in learning the melodies (and modern vocalists before singing a new tune «for fidelity» play it on the piano, and play it on the piano readings from a letter often imitate such a play by hand). I. Barsova indicates that in an attempt

to contain the perception of «slipping matter of sound» formed «graphic images», which represent «some symbolic» fields «, within which musical signs were placed» [4, p. 52]. String neck gives such a visual spatial orientation even in a polyphonic musical texture. No wonder on this basis were created tablature (in particular, lute), which literally used the musical instrument's musical space — the scheme of strings on the bar, frets, keyboards, etc. Unlike many other types of music notation, which summarize the sound logic of the music, the tablature captures the pitch (consonance) schematically, indicating the «finger location» on the fingerboard or keyboard. Thus, in the conditions of the indifference of the tone of the XVI and XVIII centuries, polyphonic instruments contributed to the spaciousness of thinking with the relief of voices, the combination of polyphonic and homophonic principles of thinking, the formation of notation (which subsequently secured the author's composer's thought).

An even more important contender for such a materialized base is keyboard instruments, the «reputation» of which has been established more than five hundred years ago and has not faltered so far. «Thanks to the ready-made audio material (tempered, discrete-gradual, but convenient system organization. — *A. C.*), they are a more reliable base in mastering (in general — the presentation, not only in the educational process. — *A. C.*)» [5, p. 161], and hence also musical thinking (almost all researchers point to the close connection of the latter two). I. Barsova believes that in the keyboard of a keyboard instrument «in this world of concrete images» musicians searched for «figures more abstract, which could become a» field» for the scheme, the table» [4, p. 52], movements of thinking. The keyboard is considered as a technological invention, which in some way facilitates playing on difficult for the initial playing of stringed instruments (especially indiscriminate ones) and acts as the most visual keeper of musical information, a convenient conventional geometric scheme of thinking on various instruments.

In the repertoire of keyboards intricately intertwined techniques (and principles of thinking) of church vocal-choral and secular song-dance styles, «singing» on the instrument and instrumental specificity, born in the context of folk dance music and new concerto — instrumental style. In addition, the various instrumental traditions were not isolated and enriching each other, demonstrating «semantic processes of intertextual interactions» that «largely determine the specificity of the stylistics of instrumental thematism (and of musical thinking. — *A. C.*) as a whole» [1, p. 96]. Clavier urtext of the XVII–XVIII centuries assimilated the intonation vocabulary formed in

the lute, violin, organ and other instrumental schools: «It is obvious that the timbre and acoustic capabilities and technique of sound extraction on the instruments largely polished visual-graphical and re-edited motive composition and logic of melodic unfolding»in pranks, coins and ground [1, p. 93]. But lute colorings within a small interval, ornamental tablature coloring with harmonious and rhythmic figurations of a limited range, performance (presentation) of the arpeggiato chord, melodic ornamentation with heavy use of sounds within the decimals; violin clichés in the upper voice are transformed into the space of a clavier keyboard: polyphony becomes more visual and embossed, increases the range and distance between voices, clavier passages increase the range to two octaves, enrich them with sextas and tertiary; harmonious and melodic figurines get a wide layout and hidden two-tone; «Alberti» bass shifts the boundaries of the timbre space of the clavier «score». And all this is in the hands, auditory kinetic reach, and thinking of one instrumentalist. Musicologists note «the special role of manual technology in the development of ornamental organ (clavier) style, which consisted solely of the pretentious combinations of homogeneous formulas» [1, p. 94]. Clavier technique made it possible to create a wealth of motor-dynamic effects and techniques, which further determined in many respects the contrasting principle of instrumental sonata as a semantic invariant of the music-chronotopic process. Clavier bass-austin genres also form a kind of logic of composition-scale proportions of the use of «borrowed» techniques. The exposition sections use the lute style of presentation of the theme, and for the developing and closing the more characteristic violin or organ coloring techniques [ibid]. The ornamental wind structures are also used, which testifies to the musical-stage or household origin and the role of explanatory «situational signs». In general, keyboard-instrumental thinking (clavier, later piano, and later — accordion) reproduces the experience of ensemble music in one person. In particular, it is the migration of three to four vocal-choral voices to ensemble instrumentalism in the trio sonata, which presented a new style of instrumental writing that relied on new homophonic thinking. Further, concerto grosso as an «expansive» interpretation of the trio-sonata (N. Arnorkour [2]) implements the ensemble principle of chamberliness on the basis of concerto style, which combines three parameters of instrumental thinking — soloing, concerto, orchestration. And finally — the sonata-symphonic principle of thinking with scale of structure; the specific cyclicality of the form, with the special dramatic role of each part, the contrasting interaction of themes and images, the introduction of leittebras — was also formed in instrumental sound. The sonata and symphonic type of thinking,

as a translator of the most complex meanings, the cultural model of thinking of its era embodies certain established image projections, reproduced directly by sound, on the instrument(s). The instrumental and sonata principle of thinking is consistent with the ways of understanding and interpreting the space-and-time being of music.

The individually-performing component of the formation of musical thinking, which is based on the feeling of the instrument, «thinking on the instrument», is already noticeable in its initial «academic» stages. Thus, G. Shokhman, referring to D. Boyden's book «The History of the Violin Play from Origins to 1761», emphasizes the utmost variant of deciphering by the skilled violinists of the musical notation of that time. Such performative variance provided, on the one hand, universalism, the empowerment of the instrument, on the other — it contributed to its specification, the formation of «timbre labels» (O. Vepryk [7]). Texture-themed material, techniques of instrumental play become inseparable from the timbre and technique of playing a specific instrument, relying on «thinking on the instrument». The tools that are most relevant to the thinking of the era dominate are here. The leading role from the Middle Ages to the XVI century is played by the plucked instruments (in particular, the lute) and organ, in the XVIII–XVIII centuries — the string-bow, where the instrumental and melodic style combining the new homophony and the old vocal polyphony, as well as the vocal polyphony, could be realized most (organs, keyboards) that best model the ensemble principle on a single instrument. Further, in the XIX century, the piano and the spirits came into play; in the second half of the XX century bayan, plucked (guitar, domra, balalaika, bandura) and drums upgraded.

The romantic era deepened the instrumental and stylistic sphere with specific parameters, and the vocal one — with instrumentation. The instrumental sound timbre shows not only the individualization of the composer's (and the performer's) expression, the increase of the performer's skill, but the new stage of communication with the listener, as well as the internal dialogue of the performer (the composer) with the instrument. The instruments perfectly mastered vocal singing skills. The genre and instrumental sphere has been enriched with new forms (for example, the instrumental Songs without Words). «Thinking on the Instrument» of the sponsors of the new soloist-concert style (above all, Liszt, Chopin, Paganini, etc.) brings the instruments themselves into the status of a worthy «partner» on the stage, in front of the audience (here we can mention the general attitude of instrumentalists of the folklore genre as living creatures). Advanced symphonic orchestral thinking gets a new solo-instrumental embodiment — on

the piano, on the one hand, as a substitute for the orchestra, on the other, on the basis of deepening into the sphere of piano intonation. It is here that the basic qualities of Liszt and Chopin's creative style are formed. And in the center here is an instrument as an «instrument» of the composer's and performer's thinking, «the enrichment of this instrument by the means of these two musical professions, and in their inseparable unity» [19, p. 35]. The piano culture of the romantic era is characterized by the unity of such factors as the instrument, the performing style (formed «under» this type of instrument) and the composer product (which takes into account the demand of listeners from the aristocratic and bourgeois salons and large public concerts). This is how the piano style of the era was born, which can be described as a completely new direction in the musical thinking and culture of Europe. Here, «thinking on the instrument» has already generated a circle of musical imagery («timbre labels»).

The XX century formed a new twist of the spiral of instrumental thinking. Already at the beginning of the century, L. Gakkel marked «the reception of two keyboards... or the placement of hands only on white or only on black keys» [8, p. 29]. On this basis, there may be a change in harmonious thinking: «there may be hands» groped «on the keyboard with polyharmonic sounds» [ibid]; and certain forms of constructive ordering of the material (with the piano keyboard acting as a «generating form», and the actual sound material itself being «a generating form» [5, p. 164]. Prelude «Sails» by K. Debussy, «Mists» and B. Tyshchenko's «Fireworks», «Piano Sonata No. 5» by G. Ustvolskaya and others embody the principle of «two keyboards» on the juxtaposition of melody and accompaniment. A striking example of the transition of keyboard representations into orchestral music is the famous theme of Petrushka from the eponymous ballet of I. Stravinskyi who, as you know, wrote for the piano.

Being asked «What does it mean to be a composer and make music?», H. Lahenman replies: «First, to create means to think about music. Secondly, folding means creating your own tool» [13]. The specification and expansion of the sound and technical capabilities of the instruments is due to the use of non-standard methods of playing on them, in particular, «non-translatable», impossible to perform on other instruments, especially expressive, sonoristic techniques: playing on the hull and other parts of the instrument, in different directions: bow, knock, friction, pizzicato on the piano and bow on the shock or pluck; the use of the hand; the use of additional items (such as a metal tube in «Salut fьr Caudwell» for two Lachenman guitars). Illustrative here are the opus of J. Kram, G. Cowell, J. Cage,

H. Lachenman, K. Pendereckyi, K. Stockhausen, and others. Sonoristics, hyper-polyphony, complex exotic rhythmics, deprivation of melody as an expressive means, dodecaphony and serialism, multidimensional composition and three-dimensional harmony — all is an incomplete list of techniques of modern composition, which are natural for multidimensional, with the possibility of the fastest switching.

The modern theory of musical parameters operates with five parameters of sound — to the traditional loudness, length, height and timbre space is added, which «enriches the aesthetic content of music, giving musical thought an unprecedented depth of expression» [16, p. 335]. The specified spatial parameter is more organic precisely in instrumental sound because of the possibility of a great degree of timbral relief and range. For example, in Stockhausen's «Ypsilon» (for a micro-interval melody instrument — that is, a wind instrument), a unanimous instrument, except for the 16 subtle high pitch degrees of small tertiary, exhibits noises — «kiss sounds,» «wind,» and the artist's voice (in its instrumental function), Indian bells (on the wrists, head, shoulders). In Guero Lacheman's Piano many different non-standard methods of play have their sound form (space, surface, sound-producing part of the hand and even legs), they give birth to timbre contrasts, with which the author builds the form of composition, conceptual structure. All these techniques can not be imagined in the performance of traditional romantic (individual-timbre) instrumental thinking — they are born not only directly on the instrument, but the instrument seems to «prompt» the composer, shaping the dynamics of the development of musical instrumental dramaturgy. This is how the «thinking tool» is born.

This new system of musical thinking, like any «new system», requires «more energy and matter (and probably information and other resources) for self-containment» [17, p. 496]. Musical and instrumental capacity, isolation from the human body and liberation from verbal incarnation allow to increase the indicated indices at times, to react faster and more diversely to the variability of ideas about space, time, matter. In particular, these processes are exacerbated today, in the context of not only the acceleration of information flows, but «the transformation of the deep essence of information on which our daily actions depend» [17, p. 266], when «instead of the usual notions of a closed universe that functions as a clock, we find ourselves in a much more flexible system in which, as it is (Ilya Prigozhii, author of «The Chaos Order», Fluctuation. — *A. C.*) says, «there is always the possibility of some instability, which leads to some new mechanisms. In fact, we have an» open universe» [17, p. 498].

Conclusions. In the course of the historical evolution of musical instrumentalism, a certain algorithm for the development of musical thinking is built up — from imitation of vocal sound expression and immanent motor-kinetic embodiment of the «movement of life» to specific instrumental forms of it, in particular «thinking on the instrument» (when organology and technique make a timbral cliché) and «thinking by an instrument» (when a musical instrument becomes a generator of musical and linguistic means, their constructive ordering, dramatic dynamics in conditions of excess being visible culture of the information society, that is — a tool of thought).

In thinking about the tool, an important parameter is the visual and tactile embodiment of the quality of space, which represents the variability of space, time, and object views. The instrument is not only an instrument for expressing a musical idea, but also an instrument of thinking for the instrumentalist and composer who owns the instrument (or relies on the sounding of a like-minded instrumentalist). The deepening of instrumentalization of composer means, the absolutization of timbre with the semantization of specific «non-translated» textural formulas in the search for a new sound, the strengthening of the role of the performing factor contribute to the birth of a new stage of thinking sounds — thinking instrument, when the latter «prompts» the composer and creative direction.

СПИСОК ЛІТЕРАТУРИ

1. Алексеева И. В. Роль инструментальной лексики в формировании клавирного текста барокко. *Проблемы музыкальной науки*. Уфа, 2012. № 1 (10). С. 93–97.

2. Арноркур М. Музыка языком звуков. Путь к новому пониманию музыки. URL: http://www.earlymusic.ru/uploads/cgstories/id4/harnoncourt.pdf (дата звернення 03.11.2018 р.).

3. Асафьев Б. В. Музыкальная форма как процесс: в 2 кн. Кн.1, 2. Л.: Музыка 1971.

4. Барсова И. Трактат Михаэля Преториуса 1. «Sintagma musicum» как источник сведений об истории нотации. *Ars notandi. Нотация в меняющемся мире*: матер. междунар. науч. конф., посв. тысячелетнему юбилею Гвидо Аретинского / ред.-сост. И. Барсова. М.: Моск. гос. консерватория им. П. И. Чайковского, 1997. С. 51–63.

5. Бергер Н. Клавиатура фортепиано как информационная система. *Вестник Челябинского государственного университета*. 2009. № 35 (173): Филология. Искусствоведение, вып. 37. С. 160–167.

6. Бонфельд М. Музыка: Язык. Речь. Мышление. Вологда, 1999. 352 с.

7. Веприк А. Очерки по вопросам оркестровых стилей. 2-е изд., испр. М.: Сов. композитор, 1978. 437 с.

8. Гаккель Л. Е. Фортепианная музыка XX века. Л., 1990. 288 с.

9. Гань Сяосюе. Образ і смисл як категорії фортепіанно-виконавського мислення: дис. ... канд. мист.: 17.00.03 / Одес. нац. муз. акад. ім. А. В. Нежанової. Одеса, 2018. 177 с.

10. Земцовский И. И. Человек музицирующий — человек интонирующий — человек артикулирующий. *Музыкальная коммуникация*. Серия: Проблемы музыкознания. СПб., 1996. Вып. 8. С. 97–103.

11. Музичне мислення: сутність, категорії, аспекти дослідження / відп. ред. Ляшенко І. К.: Муз. Україна, 1989. 178 с.

12. Музыка как форма интеллектуальной деятельности / ред.-сост. М. А. Арановский. М.: КомКнига, 2007. 240 с.

13. Мусаелян Е. С. Хельмут Лахенман: «Искусство ничего не должно». *Играем с начала. Da capo al fine*: Всерос. муз.-инф. газета 2014. № 1: URL: http://archive.gazetaigraem.ru/a12201401 (дата звернення 13.12.2018)

14. Соколов О. В. О принципах структурного мышления в музыке. *Проблемы музыкального мышления*. М.: Музыка, 1974. С. 153–176.

15. Сохор А. Н. Социальная обусловленность музыкального мышления и восприятия. Проблемы музыкального мышления. М.: Музыка, 1974. С. 59–74.

16. Теория современной композиции / отв. ред. В. С. Ценова. М.: Музыка, 2007. 624 с

17. Тоффлер Э. Третья волна. М.: АСТ, 1999. 697 с.

18. Черноіваненко А. Д. Фактура у визначенні виражальних властивостей баянної музики: автореф. дис. ... канд. мист.: 17.00.03 / НМАУ ім. П. І. Чайковського. Київ, 2002. 16 с.

19. Школяренко С. И. Художественно-стилевые функции фактуры в концертных пьесах для фортепиано с оркестром Ф. Шопена: дис. ... канд. искусств.: 17.00.02 / Харк. нац. ун-т мист. ім. І. П. Котляревського. Харків, 2017. 194 с.

20. Kurth E. Musikpsychologie. Berlin: 13. Max Hesse, 1931. 323 p.

REFERENCES

1. Alekseeva, I. V. (2012). The role of instrumental vocabulary in the formation of the Baroque clavier text. Problems of music science. (Vols. 1), (pp. 93–97). Ufa [in Russian].

2. Arnorkour, M. Music in the language of sounds. The path to a new understanding of music. URL: http://www.earlymusic.ru/uploads/cgstories/id4/harnoncourt.pdf

3. Asafiev, B. V. (1971). Musical form as a process. Leningrad: Music [in Russian].

4. Barsova, I. (1997). A treatise by Michael Pretorius 1. «Sintagma musicum» as a source of information about the history of notation. Ars notandi. Notation in a changing world: Mater. Int. scientific Conf. the thousandth anniversary

of Guido Aretinsky (pp. 51–63). Moscow: Mosk. state Conservatory named after P. I. Tchaikovsky. [in Russian].

5. Berger, N. (2009). Piano Keyboard as an Information System. Bulletin of Chelyabinsk State University. (Vols. 37), (pp. 160–167) [in Russian].

6. Bonfeld, M. (1999). Music: Language. Speech. Thinking. Vologda [in Russian].

7. Veprik, A. (1978). Essays on orchestral styles. Moscow: Sov. Composer [in Russian].

8. Gakkel, L. E. (1990). Piano music of the twentieth century. Leningrad[in Russian].

9. Gan, Xiaoxue. (2018). The image and the meaning of the category of the piano-Wikonavskogo ministry. Candidate's thesis. Odessa: Odessa. nat. muses acad. named after A. V. Nezhanovo [in Ukrainian].

10. Zemtsovsky, I. I. (1996). A man playing music — a man intoning — a man articulating. Musical communication. (Vols. 8), (pp. 97–103). St. Petersburg. [in Russian].

11. Musical art: daily life, categories, aspects of entertainment (1989). Lyashenko I. (Ed.).Kiev: Musical Ukraine [in Ukrainian].

12. Music as a form of intellectual activity (2007). M. A. Aranovsky (Ed.). Moscow: KomKniga [in Russian].

13. Musaelyan, E. S. (2014). Helmut Lachenman: «Art owes nothing» All-Russian Musical and Informational Newspaper «We Play from the Beginning. Da capo al fine» No 1 URL: http://archive.gazetaigraem.ru/a12201401 [in Russian].

14. Sokolov, O. V. (1974). On the principles of structural thinking in music. Problems of musical thinking. (pp. 153–176). Moscow: Music [in Russian].

15. Sohor, A. N. (1974). Social conditioning of musical thinking and perception. Problems of musical thinking. (pp. 59–74). Moscow: Music [in Russian].

16. Theory of Modern Composition (2007). V. S. Tsenova (Ed.). Moscow: Music [in Russian].

17. Toffler, E. (1999). Third Wave Moscow: AST [in Russian].

18. Chernoivanenko, A. D. (2002). The texture of the visnazhnennyh viral powers of button accordion music. Candidate's thesis. Kiev: NMAU imeni P. I. Tchaikovsky. Kiev [in Ukrainian].

19. Shkolyarenko, S. I. (2017). Artistic and stylistic functions of texture in concert pieces for piano and orchestra F Chopin. Candidate's thesis.. Kharkiv: Kharkiv. nats.un-t myst. imeni I. P. Kotlyarevsky [in Ukrainian].

10. Kurth, E. (1931). Musikpsychologie. Berlin: 13. Max Hesse [in Germany].

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