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## THE UNITY OF SPACE-TIME IN A. WEBERN'S MUSIC AND THE VISUAL ARTS OF THE 20TH CENTURY. ANALYTICAL PARALLELS

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*The article is devoted to the consideration of a new interpretation of space and time in music by A. Webern in the context of the spatio-temporal concept of visual arts and scientific theories of the early twentieth century. The similarities between the structure of musical fabric, the nature of the musical process and the system of perspective, the interpenetration of the object and space in painting of the early twentieth century, the interaction of internal and external spaces in the architecture of the first half of the twentieth century are considered. The conclusion is made about the creation of a new, non-classical concept of form, distinguished by a change in the ratio of its procedural and crystalline sides.*

**Key words:** *interpenetration of object and space, law series, sound structure, unity of musical fabric, concept of musical form, multidimensional sound space, transformations of sound structures, space-time continuum, process of series embodiments, serial composition, form-crystal, form-process.*

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## SPACE-TIME UNITY IN A. WEBERN'S MUSIC AND VISUAL ARTS OF THE 20TH CENTURY. ANALYTICAL PARALLELS

*The article is devoted to the analysis of a new interpretation of space and time in A. Webern's music in the context of visual arts and scientific theories of the early 20th century. Parallels are drawn among the structure of Webern's musical texture, the character of musical process and the perspective system, interpenetration of an object and space into painting of the early 20th century, the interaction of internal and external spaces in architecture in the first half of the 20th century. The author comes to the conclusion concerning the creation of a new non-classical conception of a form that differs from the classical one in the correlation of its processual and crystal aspects.*

**Key words:** *interpenetration of objects and space, row law, sound structure, unity of musical texture, conception of a music form, multi-dimensional sound space, changes in sound structures, space-time continuum, process of realizations of a row, row composition, crystal aspect of a form, process form.*

Problems of space and time on have been of interest to humanity for many centuries and have been understood in different ways both in scientific and philosophical concepts and in artistic creativity. The attitude towards these fundamental categories is one of the most important components inherent in the picture of the world of a particular era. Therefore, it is quite natural that the cardinal change in worldview that occurred in the 20th century, which affected all spheres of human

thought, was fully manifested in a new understanding of space and time, and the formation of a new concept occurred in different fields of knowledge approximately synchronously and has an undoubted similarity. Noting this, one of the outstanding representatives of the Russian avant-garde M. Matyushin said in 1927: "The painting of a modern and old artist is a complete reflection of the sensory impact of the space of nature itself. And the most interesting

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"the important thing is that it coincides and has coincided with abstract thought in the most important positions of the science of space in all centuries" [cit. from: 7, pp. 60–61].

The same can be said about the perception of time. The most important feature

characterizing both scientific and artistic ideas about the world in the twentieth century is

awareness of *the inseparable unity* of space and time.

"From now on, space

in itself and time in itself must

turn into fictions and only some kind

"the combination of both must still retain independence,"

wrote the outstanding mathematician G. Minkowski in 1908

[6, p. 167]. Objecting to the consideration of these

categories, which are most important for human

consciousness, as autonomous, Minkowski introduced the

concept of a *four-dimensional* spatio-temporal continuum.

Similar processes occur in artistic thinking. As it seems to

us, it is the spatio-temporal

concept and the new understanding associated with it

tion of movement and statics, modifications and

immutability was the condition due to which in the twentieth century a closer than ever rapprochement between the

arts took place.

throughout the twentieth century in visual

the idea of movement, processuality, continuous

modifications is rapidly developing in the arts. The

Renaissance system is being replaced by

prospects come the principle of combination

different points of view in cubism, the concept of non-linear

moving space

among the Italian Futurists, representatives

Russian Organic School. One of

the most important principles of painting, and then

sculpture becomes an active interpenetration of the object

and space, and

it is understood as a *continuous process*, which implies its

inseparability from

time. "Towards three dimensions of space

"Cubism added a fourth – time," asserts Z. Giedion [4, p.

255]. In architecture, the idea of

the continuity of space is realized in the creation of a

flexible

relationships between volumes and planes inside

buildings, as well as overcoming its impenetrability

resistance to the external space. This is achieved by

making the walls transparent, removing the tectonic load

from them, and using corner and strip

windows, a ramp connecting different floors, and many

other techniques. As a result,

the effect of continuous interaction arises not only of all the

elements of the composition, but also of the building with the

surrounding landscape, the interpenetration of internal and

external spaces. One of the first artistically perfect embodiments

of this concept in European architecture is

Villa Savoye Le Corbusier. At the

same time in music – art, according to

by its nature predisposed to the transmission of motion, -

fundamentally changes

*the nature of the musical process*. In the first

half of the twentieth century these changes are most

are noticeable in serial compositions, first of all

of all in the music of Webern, who strictly adhered to this

method. In serial music, the process is understood not as

a sequential movement from the starting point to some

result, not as a purposeful

transformation of any stable into

in its sound image of the "object" (theme), and

constant reproduction in a variety of variations of something

that is essentially unchanging

phenomena (series) for which movement and

modification is necessary as a *way of existence*. Such a

process does not lead to the achievement of a qualitatively

new level - as a result, it does not have a single direction

and goal, but

that's why it feels endless and creates a feeling of *static*

regardless of

tempo and rhythmic features of the piece. The static effect

occurs not only

because the musical similarity is lost

pulsations with biological processes - breathing, pulse, step,

which a person

used to associate with movement\*

, but also

due to the fact that in the musical process

the logical continuity, the connection between the previous

and the subsequent, disappears, which

also interferes with the awareness of time as

a single unidirectional flow. New patterns of

musical

thinking that is not based on a linear principle

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the ceremonial connection of musical events, apparently, became possible in serial music primarily due to

a qualitatively new level of unity of musical fabric. In a work where the series is the only source of all sound material, a different level of individuality is achieved.

of the formation and interconnection of all elements musical language, since the series even forms those aspects of the composition that previously were initially set - for example, the pitch system. In addition, strict following the serial method involves profound transformation of classical patterns of musical thinking in relation to *differentiation of relief and background*, which has a strong influence on the concept of form. If classical music is characterized by a clear functional

the difference between relief and background both in simultaneous sounding (melody and accompaniment) and in the process of development of musical material in time (thematic and non-thematic sections of the form), then Webern's serial compositions are based on free mutual transitions of functionally equal elements of a homogeneous sound

fabrics.

These changes, compared to classical morphogenesis, are similar to ours.

view, with a change in perspective system and interpenetration of the object and space, characteristic of 20th century painting. Classical musical texture is based

on the functional difference of plans, in which some sounds are perceived clearly, are "in the bright field of consciousness" [8, p. 29], some less clearly, and some of the sounds merge into a background layer, perceived as a whole [8, pp. 29–30]. Such a structure of the musical fabric, as we know, seems to be similar to the principles of the Renaissance system of perspective based on the primacy of a single point of view, as well as hierarchical subordination of the near, middle and distant plans. However, the concept of the serial method, according to which any material is *equally* an embodiment of a series, requires a fundamental

of a different type of texture. And Webern boldly transforms the patterns of the previous eras, organizing the musical fabric in such a way in such a way that in the zone of distinct perception it turns out that each sound is in full accordance with the concept of seriality. In classical music, the relief perception of each sound was possible only in one voice. Webern's texture is polyphonic, but the sounds in it "do not obscure" each other not only due to the amazing transparency of the musical fabric, but also because the musical space acquires

"more dimensions" than three-dimensional classical (including horizontal, vertical and depth arising due to stratification into relief and background). This effect is created by the finest nuances of timbre, register, articulation and dynamics, thanks to which a multidimensional sound is formed space, the different areas of which are not are in a functional relationship subordination. At

the same time, if we consider the structure of Webern's serial compositions in as a whole, as a sequence of musical events, significant changes can be detected the similarity between the character of the musical a process that does not undergo division into functionally different stages, and the interpenetration of the object and space in the painting of the early twentieth century. Such transformations of the previous (classical) compositional principles reflect, apparently, the cardinal changes that took place in beginning of the century in artistic thinking. The basis of classical musical works - *theme* - according to their functions is very close *to the subject* in figurative painting. In particular, the similarity of functions theme and subject is indicated by the English researcher D. Mitchell [10, p. 92]. Of course, this analogy is possible only with a large degree of conventionality. However, there is no doubt that the theme in music is a support for the ear and thinking, "that... "reality" on which the the listener's perception" [10, p. 92]. If we carry out the comparison further, then it follows, in our opinion,

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look, note that the greatest similarity with the subject in painting is typically a musical theme with a clear compact structure (for example, periodic). Of course, the theme does not always have such a relatively complete form, although this type of thematics is

the quintessence of classical thinking and prevails in the music of the 18th–19th centuries. But, even taking into account the diversity of variants of the structural appearance of the theme, one can talk about the fact that its difference from non-thematic material, general forms of sound (term of E. A. Ruchevskaya) serves in classical music as the most important means of dividing the sound flow, which is comparable to the division into figurative elements and background in classical painting. Thus, the theme in a musical work must have the necessary degree of individualization and stability, which, even with a different structure, makes it possible to grasp with the ear, to perceive its appearance as a holistic, relatively autonomous object and to follow its

transformations. In a serial product, with strict following the serial method, dividing the musical process into different points in terms of brightness and individualization of the material of the stage (similar to the thematic and non-thematic sections of the classical form) is impossible: the musical fabric is homogeneous, there can be no “non-serial” fragments in it. Accordingly, the functional difference between the main and the secondary disappears, and, consequently, the essential

difference in the information content of fragments text, which is extremely important for classical form-building.

Alternation

"active and passive moments of form" [8, p. 31] is replaced by Webern's principle of "all that is important". Homogeneity and informational richness of the musical fabric

Webern is comparable to the interaction and interpenetration of forms in the works of artists of the Organic School of Russian avant-garde, as well as with the ideas of the outstanding Italian artist and sculptor U. Boccioni, who spoke about the feeling

spaces as "continuations of materials" of varying intensity" and replacing the distinction between "objects and empty spaces" with varying degrees of "intensity and hardness space" [cit. from: 1]. The absence of division of material into the relief and background change radically changes the relationship between the elements of the composition and the nature of the musical process. Instead placement of clearly localized, personified sound structures (themes) in background material, general sound forms and transforming them according to the principle of interaction of characters within the framework of a unique musical "plot" in Webern's music gives rise to a free play of interpenetration and intertransitions of bright, contrasting in form and color sound figures, "lines", "dots", "fields".

a new type of process, based not on the sequence of presentation, development and switches (functional triad *imt*\*\*), and on continuous, free and spontaneous modifications of a single substance, while remaining essentially unchanged. The free interactions of sound elements, assumed by the serial method, are determined only *by the law of continuous embodiments of the series*. At the same time, the complex network of implementations of the serial series is a deep

level of the work and is not captured on hearing, being perceived mostly subconsciously. At the conscious level, the process of incarnations of the series is manifested in the continuous and spontaneous emergence, transformation and interaction of various, but at the same time deeply related sound

structures. Moreover, since these structures, despite their relief and recognizability, are not independent, but are the embodiment series, since their natural state becomes instability and possibility

free transformations conditioned by not by their individual nature and immediate environment, but *by the law of the series*, the action which is more complex and branched than linear cause-and-effect relationships.

Thus, the need for a consistent presentation of events, which distinguishes

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classical time-honored arts (and to a large extent music), in Webern's serial works simply disappears, and

at the same time, the quality of time also changes. Linear unidirectional time is folded into a single spatio-temporal structure in which objects and space, space and time do not exist separately, but everything is interconnected and mutually

dependently.

In this regard, it seems interesting to note once again the amazing depth the similarity of Webern's musical thinking with the laws of visual arts and scientific concepts of the twentieth century. Thus, according to According to Einstein's principle of relativity, the flow of time is not absolute concept, but depends on the relative motion of reference systems (coordinate systems). It is very close to the principle of relativity and interpretation of time in the serial music of the great Austrian composer. As a result the absence of universal patterns that would determine (how this happens in classical music) the general course of the musical process (regular-accentual (metr-rhythm, harmonic gravitations, regular change of functions, typical scale-thematic structures), time in Webern's works can no longer be perceived as something independent of the musical material. Its flow is determined by the intensity of musical events, the nature of movement and modification

complexly organized sound fabric. attention to movement and modification as non-detachable property of any form of matter (in this case – sound matter) is related Webern's music with visual arts beginning of the 20th century, which is characterized by the understanding of time as the “fourth dimension of space”. However, it seems that the most subtle differentiated webern tissue

It would be more accurate to describe music as a *multidimensional* space-time continuum, one of the dimensions of which is time. The deep unity of the musical fabric, provided by the

series, allows us to express

in music a new idea of beauty and harmony. "Only now has it become possible to compose according to one's free fantasy, without being bound by anything except row. This sounds paradoxical: only with these incredibly tight shackles did complete freedom become possible!" said Webern, explaining the essence of the new method of composition [3, p. 81]. If the aesthetic ideal of classical art was strict orderliness, the hierarchical subordination of all

elements of composition, then in modern art is dominated by the understanding of a work of art as a spontaneously developing process of interaction between different, but functionally equal components. The beauty of the fascinating play of mysteriously unpredictable sound metamorphoses in Webern's serial compositions is one

one of the most striking manifestations of the new aesthetic of the Russian consciousness.

Thus, we can conclude that Webern's musical thinking is essentially non-classical. This is due to

a profound transformation by the composer of each element of the musical language, which in ultimately leads to the creation of a new concept formation. In particular, it changes such a fundamental property of musical form as the relationship between its processual and crystalline aspects. If in in classical music, during listening, the “musical-temporal process” is perceived first and foremost [5, p. 21], and the crystal form is its *result* (apparently, this is connected with the inherent

classical thinking representation about the autonomy of time and space), then in Webern's music, the form-process and the form-crystal are perceived *simultaneously*, which, in our opinion, is due to the new spatio-temporal concept. The sound flow instantly crystallizes

into almost visible images, which immediately are melted into new ones. The crystal form is thus not the result or outcome of a process, it *is* the process. It is interesting that movement becomes the most important property of composition in visual

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arts of the twentieth century. Even in architecture, the concept of a dynamic, emerging forms, and in the last third of the 20th century, in connection with the breakthrough in the field of new technologies this process is especially actively.

It seems that the parallels we have noted between Webern's serial music and principles of visual arts first half of the twentieth century are quite natural. In this a state characteristic of the era is manifested

thought, one of the most important properties of which is the awareness of the complex, and the first glance of paradoxical unity movement and statics, space and time, modification and immutability. Such a worldview is realized in a new spatio-temporal concept, which has become the most important component of modern artistic thinking and unifies

the work of many outstanding artists of the past century.

### NOTES

\*V. N. Kholopova and Yu. N. Kholopov [9] point out the fundamental difference between Webern's musical time and the anthropological sense of time inherent in classical music, based on biological processes.

\*\*The triad I–M–T (initio–motus–terminus) was introduced by B. V. Asafiev to designate the characteristics of the general patterns of the dynamically developing process of classical musical form-creation [2].

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