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About Two Tendencies of Modernization of Rhythm: Eastern Europe (Stravinsky, Shostakovich) and Others (Cage, Boulez)

Apie dvi ritmo modernizavimo tendencijas: Rytų Europa (Stravinskis, Šostakovičius) ir kiti (Cage'as, Boulezas)

Abstract

In the music of Igor Stravinsky, Olivier Messiaen and the composers of the postwar avant-garde period we witness an actively developed critical distance in relation to the theory of “first nature” (the theory of harmony and meter functions: a thesis on the hierarchy of heavier and lighter rhythmic pulses, metric measure, phrases, and mid-sentences). And if Stravinsky and John Cage’s shift of interest to the rhythm is an alternative to the New Viennese complexity of harmonical language, then other composers, such as Messiaen, Pierre Boulez, Karlheinz Stockhausen, Milton Babbitt, Brian Ferneyhough, Helmut Lachenmann and Salvatore Sciarrino, go beyond this alternative.

A complex method applied in this paper not only explains the particular musical phenomenon, but also puts this phenomenon into a larger context, expanding the field of research: an innovative interpretation of the rhythm in the music of Stravinsky and its development in the music of Cage, Boulez’s theory of sound relativity; a transition from the metric structures (a *Lied* form) to the language of the tragic drama of the times of Dmitri Shostakovich.

Keywords: musical modernism, Igor Stravinsky, Pierre Boulez, John Cage, Dmitri Shostakovich, sound space and time, rhythmic patterns, hypermeter, latent symmetry, motivic combinatorics, method of row of numbers.

Anotacija

Igorio Stravinskio, Olivier Messiaeno ir kitų pokario avangardo laikotarpio kompozitorių kūryboje aktyviai vystėsi lemtinga atskirtis nuo vadinamosios „pirmosios esmės“ teorijos (harmonijos ir metro funkcijų teorija: tai tezė, apibūdinanti sunkesnių ir lengvesnių ritmų pulsacijos, metro, frazuotės ir pusinių sakinių hierarchiją). Stravinskio ir Johno Cage’o į ritmiką perkeltas dėmesys yra alternatyva Naujosios Vienos mokyklos sukurtai sudėtingai harmoninei kalbai; kiti kompozitoriai sugeba peržengti net šią alternatyvą: prie jų priskiriame Messiaeną, Pierre’ą Boulezą, Karlheinzą Stockhauseną, Miltoną Babbittą, Brianą Ferneyhoughą, Helmutą Lachenmanną ir Salvatore Sciarrino.

Stripsnyje taikomas kompleksiškas metodas ne tik paaiškina tam tikrą muzikos reiškinių, bet ir atskleidžia jį platesniame kontekste, praplėsdamas tyrimo lauką: pateikiama naujoviška Stravinskio muzikoje naudojamos ritmikos interpretacija ir jos plėtojimas Cage’o ir Boulezo garsų reliatyvumo teorijoje; perėjimas nuo metrinės struktūros (*lied* formos) prie Dmitrijaus Šostakovičiaus laikų tragiškosios dramos kalbos.

Reikšminiai žodžiai: muzikos modernizmas, Igoris Stravinskis, Pierre’as Boulezas, Johnas Cage’as, Dmitrijus Šostakovičius, garsų erdvėlaikis, ritminiai modeliai, hipermetras, latentinė simetrija, motyvų kombinatorika, skaičių eilės metodas.

In any knowledge, it is simply most important to notice a special reality there where we saw nothing before.

(Франк 1995: 465)

Introduction

In the early 20th century musical modernism was quite eclectic. During the 1920s and 1930s there were two tendencies, between which composers were moving during different periods of their work:

1. Neoclassicism associated with composers like Stravinsky and Hindemith;
2. Conscious initiation of the popular and urban (“other”) music, as in the works of the early modernists, such as Debussy, Satie, Ives (and others).

A turn to jazz music in the 1920s led to the references to it in the works of Poulenc, Milhaud, Krenek, Copland, Gershwin and Antheil. At the same time, such composers as Bartók, Kodály, Stravinsky, Falla and Williams developed “national” versions of modernism and incorporated folk music, which was becoming more and more available from the archives and folklore expeditions. In the period after World War II, there existed a resumption and intensification of serialism, so that from the 1950s it became the main method of theory and composition (Borne 1995). Lack of tonal reference was the key marker on the path in which musical modernism claimed an aesthetic difference from popular music.

Terms of openness to the modern era as the “disoriented era” (Бадью 2004) are:

1. the rejection of sense-illusions of subjectivity in the works of Beckett, Brecht and Stravinsky;

2. Adorno's criticism of Schoenberg's postulate of the developmental variation as an "obsolete musical logic", exposing the process as a repetition ("art should be ashamed of it") (Адорно 2001: 311, 323). We should note, however, that the realities of this era were: a strict counterpoint of Anton Webern, the most radical innovator of the Second Viennese School, and later – the canonical style in all its forms, which strengthens the technique of serial progressions as well as Berg's *Monoritmica* in conjunction with the principle of passacaglia, i.e. ostinato;
3. "poetic metrical rhythm" in Mallarme and Rimbaud's works, "depersonalization" (i.e. the interpretation of numerical relationships as of "impersonal ideas", "crystallized structure", the creation of structural relationships between the various components of sound) explored, for example, by Pierre Boulez (in *Structures Ia*) and John Cage (in the diagrams of *Music of Changes*);
4. the Dionysian "machine concept" of Deleuze (meaning his "simulacrum machinery" as a "rejection of any claim to subjectivity" (Бадью 2004: 10, 19) in relation to the desire, will, choice, or structure (as a meaning-building machine).

Nevertheless the denial of former ideals means its "coiled" life that pierces our modern mentality and sensuality just like our childhood does. Hence the eternal "dispute of old and new"; phenomenology and hermeneutics (see: Филиппов 2003), the problem of the influences and of their modernization.

Part 1. Stravinsky

The question of reorganizing the audio material in the 20th century has been associated primarily with the reorganization of rhythm. Interest in rhythm was universal, partly because of the fact that the melody and harmony have been burdened with the legacy of the 19th century. It was felt that tonal music became overly differentiated and it did not produce the same effect. Rhythm was believed to become the dominant principle. Igor Stravinsky was one of the first composers who "pushed [the rhythm] forward today" (Стравинский 1988: 99). It is the emancipation

of rhythm, the release of the rhythm parameter from the height rhythm-line trinity. An analysis of the temporal structures of Stravinsky's works reveals a complex game of metrorhythmic structures of different models: Russian meters, the technique of segmentation and variations of the rhythmic cells, an opposition of stable / mobile elements, classical structures of fragmentation and summation (Петрусева 2006: 63–68). *Transformational Grammar* (Wittgenstein's term) of classical types of meter generates a new type of accentual rhythm of Igor Stravinsky.

Symphonies of Winds have been conceived as "grandiose church chanting, the present crying of wind instruments, instead of the warm human intonations of violins" (Стравинский 1982: 3). In aspect of the genre of *Symphonies of Winds*, according to Stravinsky, "it is a strict ceremony; it develops short prayer tunes which are executed by that one other group of homogeneous instruments" (Стравинский 1963: 151). The form of *Symphonies of Winds* – result of the block's sequences from various ideas which concentrate in three tempos; from alternation and returning of these tempos there is *interferential* form of *Symphonies* (see Петрусева 2002: 60). The composer specifies tempo by means of a metronome (the exception is made by designations *Meno mosso* and *Piu mosso*):

Tempo I: ♩ = 144 (♩ = 72), Tempo II: ♩ = 108,
Tempo III: ♩ = 144.

Work on the model is caused by a game principle: "Game consists of time assignment of a certain figure that subsequently, by its modeling, supersedes its own sense." (Адорно 2001: 16). The result of the process of replacement of three models in *Symphonies of Winds* (a folk tune, crying and a choral) is:

- 1) a tempo's dramaturgy (the idea developed subsequently by Messiaen and Boulez);
- 2) which operates tempo blocks, uniting an unlimited quantity of rhythmic structures;
- 3) the new type of a composition which combines the tempo's dramaturgy with thematic architectonic and "counterpoint strategy".

Various durations of every tempo block are dispersed in the section form and the quantity of their conducting; as shown in Scheme 1, the first tempo block passes 8 times, second tempo block – 9, third tempo block – 3 times.

Tempo-block	I	II	I	II	I	II	I	II	I	II	I	II	III	II	III	I	II	III	II	I
Duration (in measures)	29	17	8	68	12	35	5	7	7	12	5	2	5	4	54	4	6	25	5	61

Scheme 1. Stravinsky, *Symphonies of Winds*. The table of three tempo blocks (numbers mean the quantity of measures)

Tempo I ♩ = 144

Groups

Density

Scheme 2. Stravinsky, *Symphonies of Winds* (numbers 1, 2).

I tempo block. Groups (группы), a density (плотность = the quantity of groups)

I tempo block, groups. The association of an unlimited number of rhythmic cells defines the density of groups. As “groups” theorists of new music characterize structures in which elements are defined in one or several parameters by the higher, uniting criteria, which also forms thanks to its set (see Петрыцева 2002: 122, 124). In Stravinsky’s example, the rhythmic counterpoint from five cells (and five accents) forms the group “a7” (in scheme 2 numbers indicate the length of the groups; see also example 1).

A set of four original (*a, b, c, d*) and derivative groups (*a', b', c', d'*) in I tempo block is “time volume” (Boulez’s term).

The problem of *derivative groups* defines the rhythmic technique by Stravinsky (Messiaen and Boulez). The main methods of development of the cells in the *Symphonies of Winds* (1920) by Igor Stravinsky include:

1. the variation of the length of rhythmic groups (a play on uneven motifs, variations on motifs with the help of accents, an asymmetrical lengthening of a rhythmic unit; a division of the unit – a method subsequently developed by Messiaen and Boulez);
2. the change in the density of groups (a rhythmic counterpoint to any number of cells: for example, 5 or 7 cells in groups as shown in scheme 2);¹
3. change of the accounts of musical units while keeping the same rhythmical pattern;

Figure 1. Stravinsky, *Symphonies of Winds* (number 1)

4. the alternation of rhythmic counterpoint and rhythmical unison (see the duplication of cells in the second and third groups);
5. multi-levelled opposition of double and triple meters (a tradition of Russian music), for example, in group a’12 this opposition can be found in the length of cells (2:3; 3:4), density groups (3:2 in group a7 in scheme 2).

The relation counterpoint and orchestral density to time volume (total of cells and groups of tempo block I) is “index of contents” using Boulez’s term.

Tempo II ♩=108

Scheme 3. Stravinsky, *Symphonies of Winds*. II tempo block

Figure 2. Stravinsky, *Symphonies of Winds* (numbers 6–8)

II tempo block (the model of a pastoral instrumental folk tune) includes rhythmic counterpoint from two to three lines (scheme 3). The original II tempo block contains three groups: e11 – initial; e'11 and e'14 – derivatives with obvious question-answer syntax.

III tempo block (scheme 4 compare to example 3). The rhythmic union of group “f” of III tempo block obviously uses the rhythmic material of group “d” of tempo block I with an increase in the least duration (the eighth instead of the sixteenth). This saved the following aspect of the letter: the opposition of the length of the cells in the groups: 3:4 (numbers 46, 48), 3:2 (47 number), 6:5 (numbers 47, 48) etc.; alternation rhythmic counterpoint and a unison; the principle of interferential form.

In the second conducting of III tempo block the group “f” is exposed to an accent variation and the variation of extent. Time’s volume of the second conducting – 14 groups.

The dynamic profile is one of three aspects of dynamics, which includes absolute dynamics (relations), relative dynamics (values) and dynamic profile (attack – stop – fading) (Boulez 1971: 114; see Петрусева 2002: 92) and is a form-building factor of the sectional form along with the tempo and rhythm. In Stravinsky’s music the might of the cell is manifested in the fact that it, being short or long,

Tempo III ♩=144 (♩=72)

Scheme 4. Stravinsky, *Symphonies of Winds*. III tempo block

Figure 3. Stravinsky, *Symphonies of Winds* (number 44)

can absorb everything, that is to interact with different elements of musical language: become combined with the motif, with themes, absorbing a particular genre intonation, “outgrowing” the tradition and becoming a “rhythmic character” (Messiaen’s term). It also becomes a mobile ostinato (covering different time periods).

In the text called *Proposals* (1948) Boulez gave brief definitions of those rhythmic phenomena of Stravinsky’s Russian period, which seemed to him most relevant: rhythmic block, rhythmic counterpoint, regular rhythm and irregular rhythm (Boulez 1986: 70):

- rhythmic block – a rhythm, which controls all parts of polyphony, as was the case in the vertical “unit” of the *Great Sacred Dances*;
- rhythmic counterpoint is controlling the independency of the polyphony in each counterpoint;
- regular rhythm, within which the durations lengths simply gain (or lose) more, as in Bach’s polyphony;
- irregular rhythm in which the duration becomes odd or irrational in relation to the whole.

In the *Rite of Spring* Stravinsky “frees rhythm of his fetters”, of the metric functionality. Balanced rhythmic structures of the *Rite of Spring* become the subject of the next article of Boulez called *Stravinsky Remains* (1951). In the article Boulez states that the balance of the parameters requires a kind of “rhythmic atonality” (Boulez 1968: 143), a conscious isolation of rhythm. Boulez along with other composers of new music define rhythmic atonality by analogy with the atonality of pitch (absence of a songlike meter, exponential growth $2 \rightarrow 4 \rightarrow 8,^2$ metric extrapolation, motifs, phrases, sentences – all that was the basis of other topics). Boulez emphasizes that the problem of the update of this kind of musical language is solved quickly through the development of the serial technique, that is, by establishing rhythmic proportionality.

Analysis of rhythmic structures of the *Rite of Spring*, which was made in turn after Messiaen by Boulez and has a title *Stravinsky Remains* (1951), reveals the effectiveness of the rhythmic factor. Extensive, pervasive and throbbing rhythmic substance is structured in its entirety by overlaying / rhythmic alternation of unlimited quantity of rhythmic groups. In the text *Stravinsky: Style or Idea? Praise Amnesia* (Boulez 1986: 349–359) Boulez, while highlighting aesthetic and philosophical aspects of the works of Igor Stravinsky (for 20 years he had been conducting Stravinsky’s music, and he knew it “better than himself”), gives a critique of neo-classicism. Stravinsky leaves the path of neo-classicism. In the latest period Stravinsky combines the new system of pitch organization (serial technique) with the methods of the development of Russian melodies, creates an individual author’s version of the serial technique, which has no analogues in the music of the 20th century.

In general, in the music of the first avant-garde composers, structuration of one parameter (rhythm-temporal) is relatively independent from the structuration of another parameter (altitude-spatial). And if Stravinsky radically updates (i.e. rewrites, in comparison with the nearest classical or romantic tradition) a rhythmic setting, the Viennese School composers renew the pitch parameter. For this reason, the new interpretation of the rhythm in the music of Stravinsky quite “gets along” with the traditional intonational material and with classical forms and genres. Following the rhythmic “lessons” by Stravinsky, Boulez concludes: *Stravinsky remains*; the rhythmic writing “should work on itself”. In the music of Boulez, this setting is realized in the rhythmic atonality of the Flute Sonata; forms a relativity of time space and time in the Second and Third Piano Sonatas, in an orchestral composition *Dérive I* (Петрычева 2002: 109–123, 186–210, 211–245, 246–268).

Part 2. Boulez’s Second Piano Sonata. The sound relativity of space and time

The Second Piano Sonata (1948) is interesting as a product of the history of serialism. From the explanation offered by Boulez, it became clear: the most innovative in the sonata are rhythmic techniques and the principle of trope (Boulez 1975: 35).

The sound organization. Partially-symmetric series. The sound organization of the second part of the sonata is based on the series, which have been written out in example 4:



Figure 4. Boulez, Piano Sonata No. 2, part II. The partially-symmetric series

The division of the series into segments $a - b - c$ is caused by criterion of the latent (hidden) symmetry extreme segments. If one was to make a shift of sounds in one of them, the latent symmetry would become obvious. In an example 1, lower case letters are written out formed as a result of the shift of sounds of the form of a segment a – the initial form from *fsharp* (p, primus); inversion from *csharp* (i), retrograde inversion from *c* (ri). Between the two first segments – a and b – there is a symmetry too: last three of the segment sound b are the inversion from e the first three sounds of the segment a (example 4, the third line); the fourth sound of the segment b drops out of repetition system $p-i$. So, already in the Second sonata a partially-symmetric series is formed, typical of Boulez.

The system of related and privilege rows. The pair of the serial rows taken through unit that is on semitone distance has the general (common) segment (example 5). So, in rows $P_6 - I_5$ (the initial from *fis*, inversion from *f*) the common is a segment “c”; in rows $I_5 / P_4 -$ segment “a”.



Figure 5. Boulez, Piano Sonata No. 2, part II. The latent symmetry of related rows

The general segments underlie the principle of related rows – the sequences of 12 rows linked through the common invariant segments at the transposition (see scheme 5). Forms of the P (primus, initial) and I (inversion) taken through the six, are invariant (example 6). Between “six” there is a relation of the latent symmetry: I_0 is permutation’s retrograde P_6 and on the contrary: $P_6 -$ the retrograde in permutation I_0 .

P_6		P_4		P_2		P_0		P_{10}		P_8	
	I_5		I_3		I_1		I_{11}		I_9		I_7

Scheme 5. Boulez, Piano Sonata No. 2, part II. The system of related rows

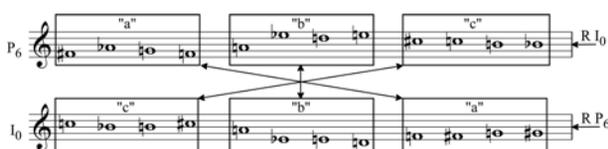
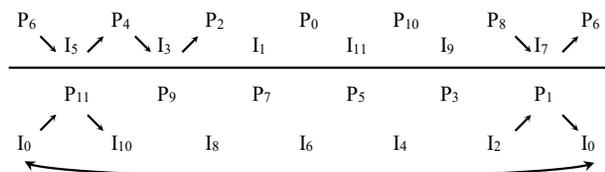
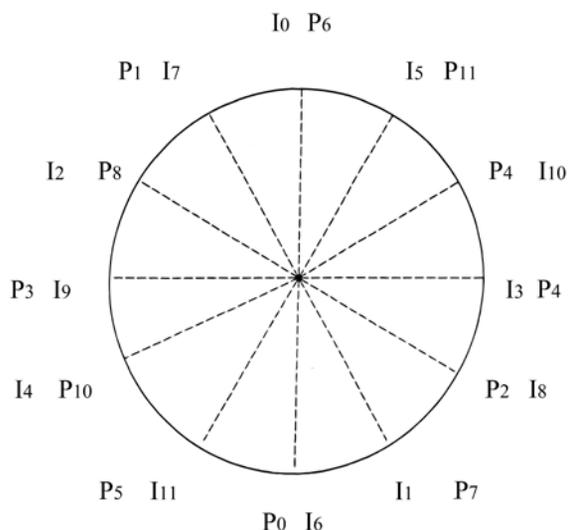


Figure 6. Boulez, Piano Sonata No. 2, part II. The hidden inversion symmetry

Thus, any pair of the “six”, taken in the form of the P and I, mutually retrograde. We will notice that in a series similar law appears. Segment *a* from *f-sharp* and segment *a* from *c* correspond as the $p(p_6)$ and inversion (i_0) through the six. Resulting hidden inversion symmetry of the “six” are two “threads” of serial rows – each of 12 privilege rows – forming mirror symmetry (scheme 6). (The question is not of mirror symmetry in a series, but about the mirror parity covering some of serial rows.)



Scheme 6. Boulez, Piano Sonata No. 2, part II. The system of the privilege rows



Scheme 7. Boulez, Piano Sonata No. 2, part II. The uniform isomorphic circle of the privilege rows

Consequently, the latent symmetry is using not 48, but 24 (or even 12) rows. These rows, possessing the quality of contiguity, are “privilege” rows. They form the circular form (scheme 7).

Properties of the material. Serial rows contain following essential properties of a material:

- likeness of rows (partial inversion invariance of segments of a series in the rows taken through unit; example 5);
- invariance at a transposition of six forms (full inversion invariance of segments in the rows taken through the six; example 6);
- inversion of the latent symmetry “the six” (mutually retrograde forms P and I at certain shift of tones; example 6).

At composite level the listed properties of the material define Boulez’s serial method.

Disposition of serial rows. Serial fields. In the beginning of the second part of the sonata, serial rows proceed in the following order: $P_6 - RI_5 - P_4$. (In example 7 under the text *the analytical score* is written out: a sequence of rows).

These rows are chosen through the principle related to the imposing of general segments with the view of avoiding repetition. Only in the first row P_6 the classical order in following of sounds of a series is observed. The further order of sounds is such that any of three segments can be considered as belonging to two forms-six. Therefore those forms, which correspond to the first circle of privilege rows, are hereinafter written out.

In the second part of the sonata serial “fields”, the composite units including some serial rows, are formed.

Figure 7. Boulez, Piano Sonata No. 2, part II. The first serial field

So, the *first field* (mm. 1–10 compare with examples 7–8) contains six rows: P₆, I₅, P₄, I₁, I₃, P₂. If one was to make a shift of these rows, it would be noticeable that the choice of all six rows of the first field is caused by the principle of related rows: P₆---I₅---P₄---I₃---P₂---I₁. Boulez performs permutation (instead of the sequence P₆ I₅ P₄ I₃ P₂ I₁ there is sequence P₆, I₅, P₄, I₁, I₃, P₂), which changes quality of a contiguity between rows.

“Bridges” and principle of trails (*insert*). “Bridges” – the common sounds of various serial rows, which possess quality of a contiguity (the “six” and “unit”). In related rows the quantity of sounds in the common stable segments is defined by segmentation and, accordingly, the imposing of rows is more regulated. In “bridges” the quantity of sounds becomes mobile, thus imposing the forms more freely.

The principle of trails is a way of expansion of the musical text. So, the first field is interrupted by the trails (similarly inserted in the Gregorian chorale) – an insert between serial fields (mm. 11–14 in example 8).

Trails that are separated from the “text – fields” by an impressive pause (m. 11) have no general sounds-bridges with last row of a field. Trails include four rows: P₂ – I₂ – P₈ – P₆ (example 8). By imposing “the six” (P₈ – I₂) two means are used: the “bridge” from ten sounds and the trails; in a row of I₂ the segment *b* interrupts segments *a* (mm. 11–12 in example 8). Here segment *b* is accompanied by repetition: sounds *f* and *e* are repeated at a short distance; incomplete vibrating coincidence “the six” (mm. 12–13 compare with example 8).

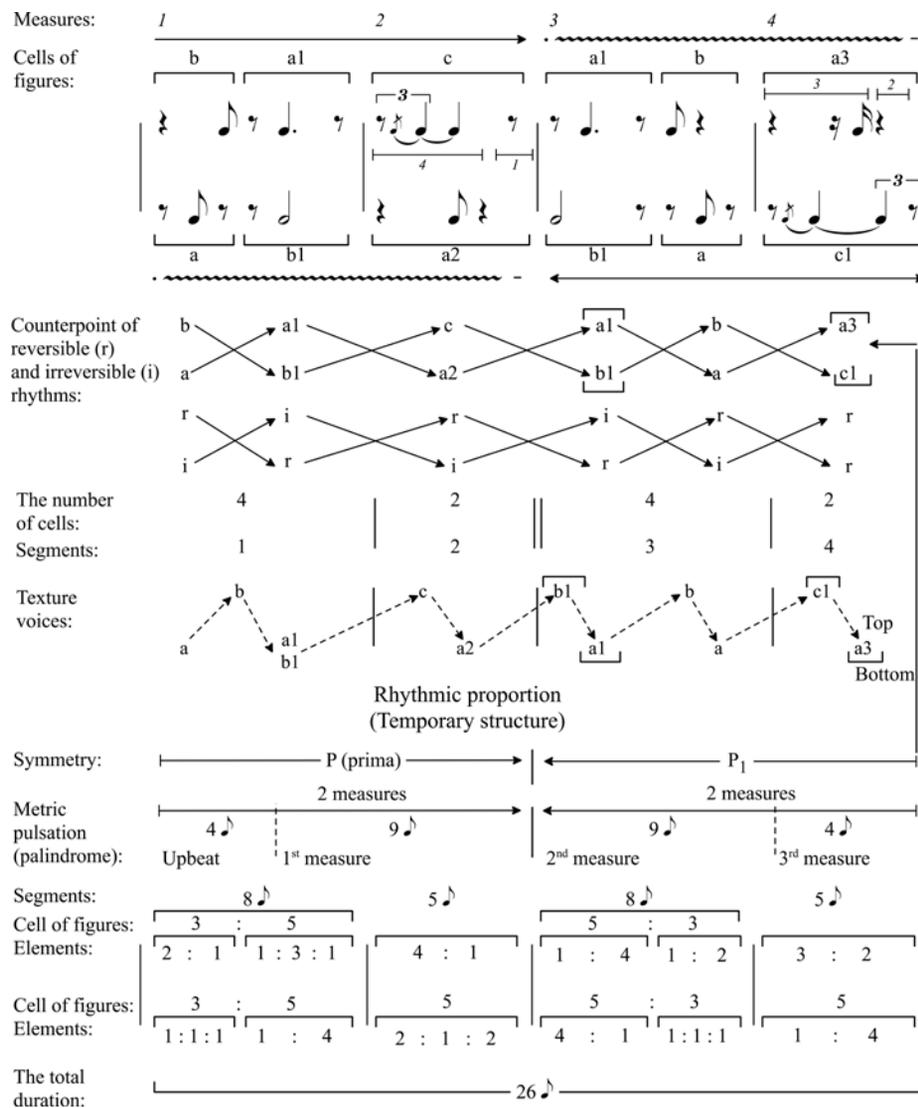
	4 4 4	quantity of sounds
I ₂	a c b	segments
P ₈	b c a b	
	2 4 4 2	quantity of sounds

Figure 8. Boulez, Piano Sonata No. 2, II part. Trop

Rhythm. In the Second Piano Sonata Boulez relies on Messiaen’s method of twelve-tone technique on the rhythm. Here the features of rhythmic techniques are so skillful that they cannot be understood without the authentic (author’s) information. In two letters to Cage (1951),³ in the text *Possible ...* (1952), Boulez explains the rhythmic technique of transformation of rhythmic cells through the example of the *Polyphony X* (1951), allocating seven types of transformation of the rhythms essential to the general principle. However, Boulez’s musical-theoretical texts settle instructions on separate receptions, giving incomplete representation about the rhythmic technique.

“*Labyrinth I*” (*the first rhythmic block*). In scheme 8 (compare to mm. 1–4 in example 7) letters specify simple cells and derivative rhythmic figures. They form rhythmic counterpoint for reversible and irreversible rhythms, independent from the sound organization.

The structure of simple cells has a certain quantity of elements. So, reversible cell *a* (♩ ♪ ♩, m. 1) contains three elements: a pause – a sound – a pause; irreversible cell *b* (♩ ♪, m. 1) – two elements: a pause – a sound. The three-element cell *a*₁ is the transformed cell *a*. Transformation – an increase in the sound of a quarter – changes duration



Scheme 8. Boulez, Piano Sonata No. 2, part II. The first rhythmic block (mm. 1–4)

of the cell in such a manner that the cell remains reversible ($\gamma \text{ ♩ } \gamma \text{ --- } \gamma \text{ ♩ } \gamma$). Transformation of the two-element cell b_1 includes sound and pause inversion ($\text{♩} \text{ ♩ } \text{ --- } \gamma \text{ ♩}$), increase in the sound of a quarter ($\gamma \text{ ♩} \text{ --- } \gamma \text{ ♩}$, m. 1). In both cases the irregular increase during which one element of cells increases duration, which is already given in the cells that are used, other elements remain invariable. (In the treatise *Boulez on Music Today* Boulez carries irregular increase to the type of simple transformation.)

In the cell a_2 those elements (pauses) that remained invariable increased their own elements ($\gamma \text{ ♩ } \gamma \text{ --- } \text{♩} \text{ ♩ } \text{ ♩}$, m. 2). Rhythmic figure with the grace note c ($\gamma \text{ ♩ } \text{ ♩ } \text{ ♩ } \gamma$, m. 2 compare to scheme 8) can be deduced from the transformed cell b_1 as follows: inversion of the cell b_1 increases twice, becoming an irreversible three-element cell ($\text{♩} \text{ ♩ } \text{ --- } \gamma \text{ ♩ } \text{ ♩ } \gamma$), that is structural invariant of cell a ; triplet and grace note addition effectively promotes creation of asymmetry and

micro-structural contrast between the reversible cell a_2 and the irreversible rhythmic figure c .

Segmentation. Rhythmic counterpoint of two irreversible and two reversible cells defines structure of an initial texture segment $b - b_1, a - a_1$ (m. 1). In scheme 8 diagonal arrows represent specified counterpoint relations between elements of a texture segment (irreversible cells $a - a_1$, reversible $b - b_1$); horizontal – a direct and return order in following cells ($a - b_1, b_1 - a; b - a_1, a_1 - b$, mm. 1–3).

Feature of an initial segment is the proportion existing between its elements-cells, equaling 3 : 5 (m. 1 in example 7, in scheme 8); counterpoint of four cells of the third measure – rhythmic retrograde of the first with a corresponding proportion 5 : 3 (m. 3 = R m. 1).

The fourth measure represents inexact retrograde of the second measure (m. 4 = R m. 2). Discrepancy

consists in updating of the cell “a”, from irreversible it becomes reversible (♩ ♪ ♩, m. 4); simultaneously the unit of accounts changes: from the fifth measure – the sixteenth. Counterpoint cells and figures of the first and third measures form the first and third texture segments, counterpoint of the second and fourth measures – the second and fourth texture segments (mm. 2 and 4 in example 7 compare to scheme 8).

Multi-parameter core. Texture segments coincide with series segmentation: a segment from four initial sounds of a series – with the first texture segment; a segment from four subsequent sounds of a series – with the second texture segment etc. (mm. 1–4 in example 7 compare to scheme 8). (It is known that symmetry strengthens the form.) In Boulez’s orientation towards the traditional polyphonic syntax, the *core* (the first texture segment) and expansion (the second texture segment) are also obvious. As the ideal sound object, a texture segment unites three parameters: high-rise (four sounds of a series), rhythmic (counterpoint four cells: see m. 1 in example 7, in scheme 8) and density parameter (four cells in the first segment, two – in the second, from three to six – in the subsequent). We name the initial composite unit structuring three key parameters the *multi-parameter core*.

Metric palindrome. Two symmetric rhythmic structures – the first two-measure as rhythmic P (mm. 1–2 in scheme 8) and the second two-measure as its inexact rhythmic R (mm. 3–4) – form the first *rhythmic block* in the proportion 8 : 5 : 8 : 5 (13 ♩ + 13 ♩, two measures + two measures; example 7 compare to scheme 8).

Parity of “accents” and sustained elements in the block form other retrograde proportion 4 : 9 : 9 : 4 (upbeat /4 ♩/, 1 measure /9 ♩/, the second measure /9 ♩/, the third measure /4 ♩/). The latent symmetry created by sustained elements becomes the *metric palindrome* (mm. 1–4 compare to the scheme 8), which freely corresponds with rhythmic counterpoint of reversible and irreversible rhythms, as well as with clock partitioning. The intention of the author is to create a structural counterpoint of reversible and irreversible rhythms, as though it is “supported” by clock lines.

The partial and latent symmetry. In scheme 8 numerical proportions of formed rhythmic hierarchy are specified:

- between elements of simple and derivative cells and figures (the first level). For example, 2 : 1 or 1 : 4 in cells $b-b_1$ (m. 1); 1 : 1 : 1 / 1 : 3 : 1 – in a and a_1 (m. 1). Thus the proportion of a figure (4 : 1) characterizes not so much the duration of elements of a figure, but rather its structure, which is a parity of irrational elements in figures a and rather rational elements of cell a_2 (m. 2 compare to scheme 8).

- between texture segments (the second level). For example, 8 : 5 in the first – the second segments (mm. 1–2), 5 : 8 in its retrograde (mm. 3–4).
- between metric units (the third level) – 4 : 9 : 9 : 4 in metric palindrome.

The second level is based on partial, the third – on hidden symmetry. All originality of the decision of the initial time structure acts as a result of interaction between the partial and latent symmetry, when one (rhythm) acts as a measure of another (meter). Hence, “contemplation time” defines this structure ambiguously: at best, it is possible to present that all cells of the first rhythmic block (except for a cell b_1) begin with pauses; the difficulty, however, is in unequivocally interpreting Boulez’s text from the point of view of the perception. It is therefore necessary to recognize the principle of structural ambivalence as a composite basis of Boulez’s interpretations of asymmetry (i.e. the partial and latent symmetry).

Idea and realization. Boulez distinguishes two criteria of creativity: criterion of installation and criterion of realization. In the first one, the rhythm block counterpoint of reversible and irreversible rhythms is realized in the form of a really sounding canon. In scheme 8 continuous diagonal lines designate counterpoint rhythms, dotted – an impressive canon track. Some deviations from the canon include two sounds taken simultaneously (m. 1) and register divergences (in the fourth measure the “top” section of a canon – a_3 – sounds below the “bottom” section c_3 : m. 4 compare with scheme 8) speak of the discrepancy counterpoint within a canon. The canon in this case is the external form of expression (or images) in a more intimate illusory structure – counterpoint of reversible and irreversible rhythms. Conversion of the canon is necessary as long as it is impossible to speak directly and indirectly about counterpoint rhythms: it is difficult to hear details of Boulez’s rhythmic combination theory, however, *the weightlessness and transparency* cumulative effects are quite distinctly audible and allow to speak about the certain technique of counterpoint.

Criteria of differentiation of a musical texture. The four-measure considered above from the second part of a sonata does not concern classical type of meter. Criterion of differentiation of the musical texture, dividing the first (mm. 1–4) and the second rhythmic block (mm. 5–8), is density repetition and density / volume, i.e. the specific form: 12 rhythmic cells in the first four-measure and 12 cells in the subsequent four-measure (schemes 8–9). The principle is as follow: there were simple cells – they became difficult; prevailed rational duration (10 of 12) – became irrational (11 of 12); the repeating density in a measure (4 2 4 2 – quantity of cells) becomes mobile (3 4 5); in the

first rhythmic block the segmentation coincided with a measure (4 segments) – in the second it has gone “across” a measure (1,5 + 0,5 + 2 measures); even the unit “accounts” have changed: there was the eighth – there was the sixteenth. From the point of view of the letter, the first four-measure is slow hocketus in style of Webern, where the tribute is given to Stravinsky (see scheme 2) and Messiaen; from the fifth measure (and further) the influence Schoenberg is appreciable, but Boulez’s temperament is already shown in overcoming of this influence through the rhythm.

Alternation of fixed / mobile (by analogy to more strict imitating and more free interludes sections in Bach fugues), or criterion of asymmetry becomes other *selective* criterion: mm. 1–4 – counterpoint reversible and irreversible rhythms, are strict rhythmic, 5–8 measures – free rhythmic counterpoint, complementally rhythmic. The criterion of asymmetry forms *amorphous* time (Boulez’s term) of these quasi-time forms, which oppose traditional chronometric time structures.

“Labyrinth II”. The second rhythmic block (mm. 5–8 in scheme 9) continues an unceasing current rhythmic counterpoint. In scheme 6 new derivative figures, texture track, and also repeating in the second block “fragment” counterpoint of reversible and irreversible rhythms are written out.

So, pair figures b_2-b_2 (m. 6) and a figure c_2 (mm. 7–8) – reversible; pair figures a_4-a_4 (m. 6) and a figure c_3 (m. 8) – irreversible. That in the first block made of two-measure, acquiring new derivative figures (mm. 1–2 of scheme 5 compare to mm. 6–8 of scheme 9). The initial two-measure – little bit heavy for Boulez – will be transformed through the method of irregular increase-reduction: the general duration of the first segment decreases (8 ♩ in the first block in m. 2; 5 ♩ in the second block in mm. 7–8); duration of pair cells of the second segment increases (5 ♩ in the first block, m. 2; 4 ♩ + 5 ♩ in the second, mm. 7–8). Thus, the initial time structure is subjected to the same

Measures: 5 6 7 8

Shapes:

Texture voices:

Counterpoint of reversible (r) and irreversible (i) rhythms:

Temporary structures

Metric units (the number of rhythmic figures):	2 measures		2 measures	
	7		5	
Tempo fluctuations:	11 ♩	6 ♩	3 ♩	2 ♩
	(6 ♩)	11 ♩	2 ♩	3 ♩
Segments:	1	2	3	
Asymmetry:	17 ♩		5 ♩	
			11½ ♩	

Scheme 9. Boulez, Piano Sonata No. 2. The second rhythmic block

transformation as a separate cell, not losing the importance of the selective criterion: the principle of the latent symmetry is expressed here in a proportion 9: 16: 16: 9 (♩). The characteristic detail, an axis of this symmetric structure of palindrome, is necessary on a triplet in m. 6, and, accordingly, does not coincide with clock partitioning. In other words, palindrome is hardly displaced concerning rhythmic structures.

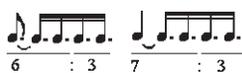
The metric pulsation is carried out by two means – rather sustained elements (mm. 5 and 7) and texture dividing pauses (before the fifth and seventh measures, accordingly).

Cells and figures. Method transformation. We will consider derivative figures of the second rhythmic block. Their quantity – as well as in the first block – is equal 12 (7 + 5, mm. 5–8 in scheme 6). Pair figures $d-d_1$ are derivative of the cell b . Transformation includes some operations: the quarter pause is replaced with a sound; the quarter shares on equal quantity of parts (sixteenth); each sound increases a point; the figure leaves in retrograde (m. 5); division of rhythmic unit into equal quantity of parts of a uniform pulsation. Addition of points to different elements creates effect of irregular increase, according to the terminology by Messiaen, independence of a rhythm of any pulsation that infuses the music with special charm.

In the pair figure d_1 at the moment of increase the sixteenth points (mm. 5–6) the eighth increases own duration (2) and goes in retrograde (3):



Musical “account” of rhythmic figures d and d_1 is made according to the proportion 6 : 3 or 7 : 3 (mm. 5–6 in scheme 9):



With the addition of pauses, duration of both figures becomes equal 11 ♩: in $d - 6 : 3 : 2$; in $d_1 - 1 : 7 : 3$ (mm. 6–7). The proportion of figures $d-d_1$ makes their deducing from the cell a possible:

m. 5	♩ ♩ ♩ ♩ ♩ ♩	♩ ♩ ♩ ♩ ♩ ♩	♩ ♩ ♩ ♩ ♩ ♩	♩ ♩ ♩ ♩ ♩ ♩	♩ ♩ ♩ ♩ ♩ ♩
Transformation stages	0	1	2	3	4 (m. 5)

The explanation of a similar structural duality is given in the first measure, namely: the three-element cell a at defined permutation can become an equivalent of the two-element cell b : ♩ ♩ ♩ (1 : 1 : 1, m. 1) --- ♩ ♩ ♩ (2 : 1), that is in a certain context $a = b$. (This equivalent is used by Boulez in m. 12).

In all considered cases, in the course of transformation of one cell (or figures) into another one, some operations are potential (they are not given in the text), others – real (with the concrete cell written out). The parity of the potential and the real characterizes “labyrinths” within Boulez’s composition method (compare: “internal consciousness of time” – term by Husserl).

Invariance as freedom and necessity. The combination from two figures $d-d_1$ and cells b (mm. 5–6 in scheme 9) is supplemented with the combination of “four” in a simple proportion 2: 3 / 3: 2 at a unit of equal eighth account (m. 6). This combination, tempo and structural “mould” from the first measure represents, as we already mentioned above, counterpoint of reversible and irreversible rhythms. Thus the proportion 3: 5 / 3: 5 characterizes rational duration of cells (mm. 1, 3), proportion 2: 3 / 3: 2 – an irrational combination of “four” (m. 6).

The group of three figures $e-e_1-e_2$ and two figures c_2-c_3 , making the second two-measure of the second rhythmic block, have a similar sign: the relation of two unequal elements – short and long (or on the contrary). In the original form the similar relation produced essence of the cell b (♩ ♩, m. 1). Proportions of this relation can be various. So, figure e (m. 7) has the proportion 3 : 7; a course of transformation by a sign – irregular increase, partial inversion (replacement of a pause with a sound). We will notice that the figure d_1 (mm. 5–6) had the same proportion (7 : 3) taken in retrograde. Thus, the latent link in the course of transformation of figures described above $d-d_1$ – replacement with a pause sound – with the advent of a cell e becomes obvious. (We will add, as other latent link – division into equal quantity of parts – becomes obvious in a figure, m. 11) Similar shifts in the course of transformation-generation of rhythmic figures are equally caused by *freedom* and *necessity* within the Boulez’s combination theory.

Rubato. The comparative table of time proportions of first two time blocks shows the latent symmetry underlying rhythmic counterpoint (scheme 10). Fluctuation of the rhythmic unit assumes very thin *rubato*. The Debussy

First block proportions	Measures	Segment	Second block proportions	Measures	Segment
3: 5 3: 5	1	1	(♩) 11: 6 6: 11	5–6	1
5: 5 5: 5	2, 4	2, 4	(♩) 3: 2 2: 3	6	2
5: 3 5: 3	3	3	(♩, ♪) 7 ♩: 9c 9x 9 ♩: 5 ♩	7–8	3

Scheme 10. Boulez, Piano Sonata No. 2. Proportions, the latent symmetry

and Chopin's *rubato* (which is conceived by "layered" traditional structures of severe metric accuracy) in any way does not mean the change of a line or rate, but only a nuance change, movements:⁴ some dry and ironic tone of the beginning of the second part becomes more persevering, passionate and opened.

Rhythmic field. A series of transformations. Four time blocks, from which we have considered first two,⁵ form a field. In scheme 11 two are shown as the factor – *the density and the volume* characterizing a time field as hierarchically larger composite whole. The density is defined by quantity texture tracks of rhythmic counterpoint (from two to four in the first field). Volume is the quantity of serial rows, rhythmic segments and registers. There is "stretching" of four texture layers on seven registers. Formed geometrical figures, "spatial pauses" (according to Ingarden, they are "forms of separate sound combinations" and don't concern sound moments of composition) characterize the original strained stylistics of Boulez's music.

The sequence of twelve segments making first rhythmic field, represents *a series of transformations*. Thus four segments (see mm. 3, 7, 10), forming counterpoint of irreversible rhythms, are invariants of the first texture segment, other seven are derivatives.

Rhythmic hierarchy. As a whole, the rhythmic hierarchy includes four levels:

1. cells (simple – two – three – five-element. Difficult – derivative figures);
2. segment (includes some cells);
3. rhythmic block (contains some segments);
4. rhythmic field (consists of several blocks).

Part 3. Piano pieces by Cage

It is hardly possible to name a composer who hasn't been influenced by Stravinsky's modifications of rhythm. However, the trajectory of this modification is individual each time. Thus, the identification of two concepts – the event and the eternal return – is shown in the music and texts of John Cage. This understanding is articulated in the early plays of the second period of Cage's work (1935–1938). And the fact that rhythms are "ways to exist" rather than just a property of sound, shows their relation with time. Through such expressions as "in search of the One", "think / claim the accident", "numerical simulacra" (which encumbered a strict sense, borrowed from the *Great Roll* by Deleuze), along with a tendency to perversion (a tendency to say simple things from your own self, on behalf of the affects, force,

Time blocks	I	II	III	IV
Density	2	2–3	3–2–3	4
Volume (quantity of rhythmic segments)	4	3	2	3
Quantity of serial rows	Serial field _____6_____			Trails 3
Measures	1–4	5–8	9–11	11–14

Scheme 11. Boulez, Piano Sonata No. 2. Rhythmic field (mm. 1–14)

worries, experience, as in the texts of Nietzsche, Stravinsky, Messiaen, Boulez, Cage), we can understand that the base of the rhythm and sound's life is called an eternal return.

Now we are referring to the early second period of Cage creativity (1935–1938), i.e. (according to periodization by Cage) to “compositions with desired rhythmic patterns, or the sound-scale fragments”. The material of the piano piece called *Quest* (1935) is a “rhythmic pattern”. The first model, repeated twice, contains 5 elements (see example 9) – triplets, dotted quarter, eighth, quarter, whole note; its length is eight quarters; we will denote it respectively as a8. The second model (also eight quarters, b8) is the ostinato of four chords (example 10). Third model is the ostinato of two large sevenths conjugated through a minor second (sixteen eighths, c16) (example 11).



Figure 9. Cage, *Quest* (m. 1)



Figure 10. Cage, *Quest* (m. 2)



Figure 11. Cage, *Quest* (mm. 3–4)

The writing and technique of development are here dominated by the counterpoint rhythms and their overlay (m. 7 in example 12), rotation (change of the order of elements in the first rhythm: compare example 13 with example 14); rhythmic canon (example 14); seventh of all the three rhythms is used, probably with the influence of technique of a dissonant diatonic Stravinsky used (language, according to Bergson, is defined as “a historical leftover”).



Figure 12. Cage, *Quest* (m. 7). Overlay of rhythms



Figure 13. Cage, *Quest* (m. 9). Rotation



Figure 14. Cage, *Quest* (m. 10). Canon

The reduction of the three rhythms (along with the canon) to a united length, equal to eight quarters (although, technically, these models have different counting units: a quarter, an eighth, a sixteenth) shows Cage's propensity to combinatorics.

In *Two Pieces for Piano* (1935, second edition 1974), Cage's “rhythmic patterns” override the theme. Thus, the first rhythm a10 in the left-hand part (10 eighths as in example 15) includes three elements:

- 1) a pause and a sixteenth note triplet with the eighth,
- 2) two eighths (an upbeat and the first beat of a measure),
- 3) three eighths with a pause.

Slowly



Figure 15. Cage, *Two Pieces for Piano*, No. 1, mm. 1–2

The second rhythm b13 – 13 of eighths (see right-hand part in example 16) again includes three elements: syncope (an eighth, pause, quarter, eighth, pause), two eighths and three eighths with a pause; in terms of the rhythm, the last two identical elements are based on the first figure, while the first one is the original version of syncope (see example 15). The mismatch of the bores means a displacement around the motif, bar, beat, and in more broader terms – on the “other side” of traditional songs and the measure syntax (in fact, beyond the romantic subject). It is a free combinatorics of the sound, accent (advocating conditional barlines and syncopation), pauses, rhythms or shapes, Something and Nothing.



Figure 16. Cage, *Two Pieces for Piano*, No. 1, mm. 2–3

The basis of this form is the method of a developing variation: a varied repetition of the initial rhythmic patterns (the influence of Eastern music, Stravinsky and partly Schoenberg; remember also about the method of “end promiscuity” and “contraction” rhythms in the *Organ Book* by Messiaen).

How to clarify the situation aesthetically? It is important to think of a way of existence of rhythm and timing. Obviously, having considered the first piece called *Quest*, on the basis of the second piece, we begin to understand that the length of three rhythms of the *Quest* (equal to eight three-quarters) is the search for the One, as a generalization of the results in the rhythmic structure of numerical series, as it is evident in the compositions *A Room*, *Lecture on Nothing*,⁶ etc. Later, constructions along with the uncertainty, loss of self, irony, hybridization, carnivality (etc.) were the specific characteristics of postmodernism that the researchers could refer to. Classical themes for the European, East-European and American postmodernism were the themes of the “end” of a philosophical modernity (a period, which is determined through the organizing role of the Subject category since the Renaissance), “end of literature”, “death of the author / art” techniques of deconstruction (categories of a Subject or Consciousness in the works of Nietzsche, Freud, Heidegger, Derrida, etc.), work with ready-made styles.

Returning to the subject of modification rate, we should remember that the system that was conceived by M. Hauptmann and G. Riemann as the “first nature” (the theory of harmony and meter functions: a thesis on the hierarchy of heavier and lighter rhythmic pulses, metric measure, phrases, and mid-sentences) was reinterpreted a century later by some historians and theorists of history into the hypertemporal system. However, an actively developed critical distance in relation to this tradition was notable in the music of Stravinsky, Messiaen and the composers of the postwar avant-garde period. And if Stravinsky and Cage’s shift of interest to the rhythm is an alternative to the New Viennese complexity of harmonical language (remember the subtle compliment Schoenberg said to Cage: “... no talent for harmony, but an inventor of genius”, then other composers, such as Messiaen, Boulez, Stockhausen, Babbitt, Ferneyhough, Lachenmann and Sciarrino, go beyond this alternative.

Part 4. Treatment of a trochee in the music of Shostakovich

Under the conditions of the synthesis of the new tonality and modality, Shostakovich (1906–1975) continued the romantic tradition of composers of the 19th century, where the rhythm plays the role of ordering

the melody and harmony in time (in a trinity of height–rhythm–lines) within the treatment of meter and rhythm. A kind of psychological arioso, made with an impeccable sense of the proportions of light and darkness, of frankness and reticence, memories and forgetfulness, defined the unity of the style of “psychological age” and pushed Russian musical culture forward as the leading one, along with the verbal Russian literature (Turgenev, Chekhov, Dostoevsky, Gorky and others). There were three principles that reconciled, according to Jaworski, the Russian musical speech: 1) detailing of the passionate emotion, 2) elements of emotional expression, 3) verbal depiction (Яворский 1987: 73).

Now it seems appropriate to look at the lyrical and philosophical center of the Symphony No. 9, Op. 70, – namely *Moderato* of the second part, the main theme, which is written in a three-part song form.⁷ Features of its style are distinct due to the synthesis of the new tonality and the modality of the sonata form. If we start from the “God – in particularities”⁸ paradigm, it is necessary to pay attention to the waltzes hypermeter of a trochee (i.e. increase in a metric measures twice) in a theme (clarinet solo; compare example 17 with scheme 12).

28 Moderato (♩ = 208)

Cl. *p legato*

Vc. Cb. *pizz. vibrato*

7

13

19

25

Figure 17. Shostakovich, Symphony No. 9 in E-flat major, part II, fragment (clarinet A is written in C)

Exposition of the main theme <i>Moderato</i> ⁹	Structural variation
 Metric measures: 8 7 Graphic measures: 16 14	The initial metric period – a trochee of the first type of meter with two cadences (8 metric measures); The second metric period – a trochee of the first type with two cadences (7 metric measures)

Scheme 12. Shostakovich, Symphony No. 9, part II¹⁰

In the resulting fragment (an exposition of the main theme), there are two trochees of the first type of meter: 16 (16 graphic measures = to 8 metric measures) and 14 (14 graphic measures = to 7 metric measures: example 17 compare with scheme 12).

Trochaic structures are typical in Shostakovich's polyphony. Thus, at the heart of the main theme of part III of the Sixth quartet of Shostakovich (the first performance in 1956 by the *Quartet Beethoven*) there is the metric period, a trochee of the second type of meter with addition (5a) under the scheme 1 2 3 4 5 5a 6 7 8 9 (10 graphic measures = 9 metric).

It is possible to be convinced that the tonic and thirds in E minor follow the metrically heavy measures (in mm. 1, 3, 5, 5a, 9); in 7th rather heavy measure there is a deviation to a dominant with the subsequent return to the basic tonality to m. 9th.

At the basis of the first theme-monogram (D–Es–C–H) from the first part of the Eighth quartet (C minor, devoted to the memory of victims of fascism and war, 1960) the cross symbol lays; theme structure is a trochee of the first type of meter (example 19). Exposition of another theme from the first part of the Eighth quartet is also a trochee of the first type of meter (with metric gravitation

1→3→7, as in example 20): and we understand that grains of structural interrelation (the logic maintenance) finally allow to carefully carry the images that exist consistently through all conditions and achieve expressiveness and unity of style within the quartet.

For context expansion in *Lied* form, we will provide exemplary treatments of a trochee from the music by Dargomyzhsky. We shall begin the discussion of Dargomyzhsky's lyrical monologue *I am sad* with the discussion of the form. Lermontov's six-lower case verse iambus (Rus. *шестистрочный стиховой ямб*) becomes *Lied* form, in which the basis of the "express trains and trains" is laid by metric structures. Then we will find out the form of four varied metric periods (simple repetition is always monotonous and uninteresting). So, an initial trochee – the trochee of the *second type* of meter (in scheme 13 its metric gravitations are shown) – has no square structure (fifteen graphical bars, as in example 20). Asymmetry (derivative of symmetry square structures) has the following explanation: here we witness nine metric measures with expansion in measures 8 8a and five measures conclusion – the incomplete metric period with addition 9a under the scheme 6 7 8 9 9a (hyphens in example 20 specify the caesuras of different degree of depth).

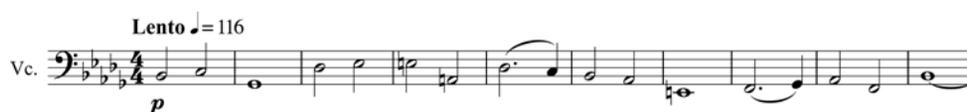


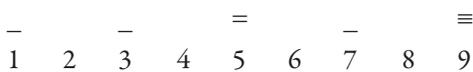
Figure 18. Shostakovich, The Sixth quartet, part III



Figure 19. Shostakovich, The Eighth quartet, part I, the first theme (a trochee of the first type of meter)



Figure 20. Shostakovich, The Eighth quartet, part I (a trochee of the first type of meter)



Scheme 13. Dargomyzhsky, *I am sad*. A trochee of the second type of meter

Then Dargomyzhsky changes meter, having put in the forefront two traditional-western iambs, then returning in a “speech” trochee that follows (scheme 14).

III		
┌──┐┌──┐ 2 10 5	┌──┐┌──┐ 8 8	┌──┐┌──┐ 1 10 3
a trochee of the second type of meter with two cadences	iambs (with two cadences)	a trochee (metric reprise)

Scheme 14. Dargomyzhsky, *I am sad*. Metric structures, the form

Let’s pay attention: *Lied* form of the romance has *structural mediation*, when metric modulation from a trochee of the second type of meter (nine-measure) in a jamb and back (scheme 14) is accompanied by small (*intra theme*) modulation (a deviation in low II through side dominant in mm. 27–29). The structural variation covering deep, logic-aesthetic intrinsic level of creative thinking, consists of Dargomyzhsky’s doubles:

1) an *easy* eighth measure in an initial trochee, in words “молодость цветущую твою / *your blossoming youth*” (expansion 8a, as in example 21);

2) last *heavy* measure in the conclusion to an initial trochee in words “не пощадит молвы коварное гоненье / *will get no mercy from the spiteful innuendos*” (addition 9a in example 21);

3) rather heavy seventh measure in a metric reprise, at repetition of words “мне грустно потому / *I am therefore sad*” (metric 7a in example 22);

In this game of metric structures, Dargomyzhsky is the typical representative of the psychological epoch: through the independent-musical means (and not just characteristic for its intonation-speech) he creates transition from the love lyrics (“цветущей молодости / *blossoming youth*”) to the dramatic presentiment (к “коварному гоненью”, “... слезам, тоске, судьбе” / *spiteful innuendos, ... to tears, sorrow, destiny*), from doubling metrically easy measures of an initial trochee (8 8a) – to doubling metrically heavy measures in the conclusion of the initial and reprise trochees (9 9a, 7 7a, as in examples 21 and 22). Set of all means induces us again to take pleasure in the passion of the statement (passion as personal experience of aspiration-inclination).

The treatment of Dargomyzhsky’s *Lied* forms (a structural variation of the metric periods, metric modulation and structural mediation) opens *detailed elaboration* process of “passionate agitation” in music. In a musical masterpiece by Dargomyzhsky a *freedom* is shown in the synthesis of Western jamb with a Slavic trochee. The metric structures of trochaic type of meter, the structural variation (eight, nine or seven measures), are typical in Musorgsky’s music (*Pictures at an Exhibition*), also in the oeuvre of Borodin, Liszt, Debussy (introduction to opera *Pelléas et Mélisande*),¹¹ Shostakovich. While hypermeter meets the iambic structures of waltzes by

Figure 21. Dargomyzhsky, *I am sad*, mm. 1–10

Figure 22. Dargomyzhsky, *I am sad*. A metric reprise (a trochee of the second type of meter)

Tchaikovsky, Glazunov, etc., Shostakovich brings hypermeter on the metric structures of trochaic type.

Coming back to example 17, we will notice that variability of triple and four (double) meters (influence of the variable meters of Stravinsky) complicates the trochees in the aspect of asymmetry, which has turned into a certain law of the 20th century (Modigliani, Braque, Picasso, Chagal, Goncharova, Larionov).

Concerning modal deployment in time after low 5th and 2nd degrees (*f*, *c*: in the second and fourth metric measures, as in example 17), there is at first 3rd major (*d sharp*) and, at last, low 8th (*b flat*: in an easy eighth metric measure of the first period). Thus, Shostakovich's modal (displaced) scale with the low degrees is developed.

However, in the personal opinion of the author of this article, in Shostakovich's diatonic expositions the chromatic element (with its philosophical and tragic context) is more of a summary (as opposed to the incidental theme of the second movement of the symphony), which significantly distinguishes this way from the "thick" chromatics of the New Viennese School; the motivic logic articulates the mode in this exposition site in such a way that all the minor seconds are given in the borders of the motifs (*b - g-sharp*, *g - f-sharp*, *f - e*, *e-flat - d*, *c-sharp - d - b*, in mm. 1-5 counting from the end). To develop this point it must be said that within these motifs there are no chromatic elements, because then the small second intonations played by clarinet solo could eventually gradually and steadily supplant other intonations. This modulation from diatonic scales to a tragic and intense chromatic figure of the hemitonal type begins in the first period.¹² Ultimately, the changes of the steps to low 5ths and 8ths of the modal scale are not an alteration, but rather the need or the form. The lowest 8th (*b-flat*) is the dominant of E flat major, the main key of the symphony; and low 5th (*f*) is needed to achieve F minor, the tonality of the second theme of the second part.

As part of the symphony, the interaction of metric structures and process of modal modulations in an exposition¹³ involve a complex unity of the three groups of motifs, let's call them *a*, *b* and *c* (the numbers indicate their length in fourths: two / five / three, and so on, as in example 17) with their many variations and combinations (the motivic combinatorics as a network of motif-thematic relations has no limit for Shostakovich). Let's consider art as the motives' combinatory, the language incorporating principles listed above detailing the passionate emotion, emotional expression and verbal depiction, which manifests as a result of that.

Motifs with the sounds of chords, mainly tonic (with the predominance of tertian-fourths and fifths, ascending and descending passages, as well as single sounds of tonics): a7 (sub-motives a2 + a5, united tonic triad in mm. 1-3:

graphic measures are hereinafter specified), a3 (*b - f-sharp* in mm. 4-5 in example 17, *f-sharp - d-sharp* in mm. 8-9, the minor third interval in another harmony *b-g sharp* in mm. 24-25), a2 (single of the tonic third (*d*) in m. 20), a5 (filled thirds to the tonic quint *a - g - f-sharp* in mm. 17-18, a fifth *b - f-sharp* in mm. 21-23 and to the tonic *c-sharp - d - b* in mm. 29-30) and finally, a4, the modal option with a low step (*d - c - d - b*, in mm. 12-13):

a) descending chromatic motifs with a pause (and without it): b5 (*g - f-sharp - f - c*, or *d - c-sharp - c - g* in mm. 3-4 and 7-8 in example 17), their modal semi-diatonic options: b4 (*d - c - g* in mm. 7-10), b2 (*f - e* in mm. 26-27), b6 (*e-flat - d - e-flat - d*, mm. 27-29); shortened motifs: b2 (*d - c-sharp* in mm. 11-12) and b3 (a minor second to the tonic fifth *g - f-sharp* in mm. 25-26, while the inverse of c3 in mm. 13-14 and a shortened version of the motif b5 in mm. 3-4: their approach toward each other is a part of the problem of the chromatic tonality);

b) ascending motifs of seconds forming diatonic themes: c5 (*d - e*, mm. 6-7, a double ascension to the major third *d-sharp² - e - d-sharp³* in mm. 18-19 in the same Example), c3 (*f-sharp - g*, mm. 13-14); their semi-diatonic modal options: c5 (*a - b* in mm. 15-16, where the modal basic tone of a shifted mode (b) is introduced with a semitone, based on the logic of tonal harmonies).

In addition to what was said about the motifs' combinatory (stopping only briefly on the question of why the motif takes a specific form) it is necessary to add a characteristic of the tragic drama of Shostakovich's "talking" statistics: in the melody there are 7 ascending motifs (four are in the first metric period, three - in the second) and 17 descending motifs. However, the bass part, shared by cellos and double basses, significantly alters this relationship: the bass line persistently "holds" the diatonic with the ascending authentic motifs by the sounds of the tonal mode, and these motifs are exceptionally a-ones. This way the skeleton of the tone of the B minor mode is at the top of the iceberg, one of the most striking examples of this kind. Thus, Shostakovich develops the tradition of song form with the means of hypermeter and variability, modal modulation, balance of a tonality and a modality, motivic combinatorics under the conditions of the new chromatic tonality and modality.

Isn't that what Webern and Schoenberg were working on as the problematics of developing the ideas of Adolf Bernhard Marx, the founder of the theory of musical form - how to compose a theme? The creation of the theme of the sonata allegro, rondo, scherzo and adagio is already a composition of form, and various forms suggest qualitatively different themes (and vice versa). Brought to such a degree of connectivity the art of composition of

classical music (traditions developed by Shostakovich), means that the choice of the material of the theme and the form is more than just another orchestration. This art of composition was exactly the topic of the discussion.

Conclusions

The complex method applied in this paper, on the one hand includes a philosophical and aesthetic tradition, which is extending from antiquity (Aristotle). The tradition is shown in the form of the consideration of the ratio between a categorical pair – material / form (metric, tonally-modal, motivic and thematic materials and their forms; rhythmic phenomena, “rhythmic pattern” and their structure). The way of sound thinking is presented here as a balance, a network of relations, oppositions, according to the “methodological structuralism”: sound (metric, tonal and modal functions, modal modulations, diatonic and chromatic, tonality of the romantics and a new chromatic tonality, etc.), structural (graphic and metric bars, iambic and trochaic types of meters; rhythmic combinatorics and a developing method of variation) and extra-musical (tradition / innovation, freedom / dogma, Eastern Europe / West, and so on). On the other hand, the complex method used here is oriented towards the phenomenological dialectic of Aleksei Losev, which unifies science and phenomenology in the field of descriptive reference of the structural-differential, structural-integral, and substantial-integral (or aesthetical-integral) terminology, and elements of the cultural parataxis method. This involves transition from the metric structures (a song form) to the language of the tragic drama of the times of Shostakovich.

Another way of transition is from the abstract intervals, tonal and modal scales to the dialectics of the motivic combinatorics and even more – to the synthesis of the new tonality and modality. This integrated approach not only explains a particular musical phenomenon (rhythmic cells, groups of Stravinsky, metric periods of a song formula of Shostakovich, Cage’s “rhythmic pattern”), but also puts this phenomenon in the larger context, expanding the field of research: an innovative interpretation of the rhythm in the music of Igor Stravinsky and its development in the music of John Cage, Pierre Boulez (and other composers of new music), the projection of the ancient theory on modernity, modification of a song form tradition in the music of Shostakovich.

Speaking of our reality, we probably need to talk (to expand the context) of the deep discontent of the contemporary situation that the musicians are in. Where does this discontent come from? First of all, from the often inappropriate sound material: it is either too old, or too

new (and, therefore, eliminates the song form, objectivity of the metric functions, followed by harmonic functions). A change of the paradigm in the post-war avant-garde music leads to the appearance of a purely private language. The crisis of the Western concept of enlightenment and reason lead to the interest growth toward the subjectivity of the Oriental type. Of course, there is also a modification of the Western concept of thinking: for example, the serial thinking that every time re-creates the required objects along with forms, necessary for their organization; questioning the linguistic universals of the tonality this thinking refuses the relations usual for the tonal music. Legitimizing and establishing itself, serial thinking is a criticism of a more powerful and lucky song tradition “criticism of luck, criticism of success” (Adorno).

Progressive individualization of musical forms is a historical process, which is the basic characteristic of the music from the 18th to the 20th centuries. This individualization does not deny the concept of organization, decision and choice that the composers of new music take. This means that no matter what their personal language is, it has the bases that are individually installed on a system of coordinates, to insure the value of the product. After Stravinsky and Messiaen they have the substitution of an idealized functionally metric rhythm with a rhythmic thinking that again becomes a structural and experienced thinking, making discoveries and creating constructive theories.

References

- 1 The method of row of numbers in analyses of rhythmic cells of Stravinsky is accepted from Messiaen and Boulez.
- 2 Metric gravitation of iambic type of meter is carried out under the scheme: the second measure tends to lean toward the heavier fourth, the fourth measure into the more eighth, while the sixth measure is relatively heavy.
- 3 Second letter of Boulez to Cage has been published in 1952; the first remained unpublished up to 1986 (Boulez 1986: 129–142).
- 4 According to Ingarden, *movement* is not sound moment of a piece of music along with quasi-time structure, the form of separate sound combinations, emotional qualities, feeling, to graphic motives, aesthetic value. See: Ингарден 1962: 493–524.
- 5 The analysis of the third and fourth time blocks see: Петрусева 2002: 118–122.
- 6 A row of numbers in the composition *A Room* is 2 (4, 7, 2, 5, 4, 7, 2, 3, 5); in the *Lecture on Nothing* the unity is divided into 5 big parts in the proportion 7–6–14–14–7. Each of the five numbers of the row points to a “big” part of the *Lecture*. The technique of the numeral row is also used in *Amours* (1943), in the *Book of Music* for two prepared pianos (1944), in the *Prelude to Meditation* (1944), in *Three Dances* (1945), etc.

- ⁷ The score of the Ninth Symphony was created in one month (August 1945). There are four parts; the general modulation embraces the tonalities of the major-third chain: I part – E-flat major, II – B minor, III – G major and the IV – E-flat major.
- ⁸ It is an epistemological model (paradigm) in the field of humanities, which quietly emerged in the late 19th century. In a series of articles on Italian art, Morelli showed (in 1874–1876, respectively) that in order to establish the authenticity of the painting, attention must be drawn not to the most eye-catching details, which are easily reproduced, but to the attributes, not affected by the influence of a particular school (earlobes, nails, shape of hands and feet) (see Гинзбург 1994: 1).
- ⁹ We should also remember that according to the metric theory it is necessary to distinguish between 1) graphic and metric measures; 2) heavy and light measures. Odd measures bear more trochaic density in the first type of meter – 1, 3, 5 and 7: moreover, the first measure tends to lean toward a heavier third, third measure into the more severe seventh, while the fifth measure is relatively heavy (1 → 3 → 7); harmonic cadences follow (as well as light measures) the functions of heavy measures: m. 1 – pause, 3 – semi-ending, 5 – waiting, 7 – full cadence.
- ¹⁰ Conditional-making comment designations are accepted by Kholopov (Холопов 1988: 504). Functions of parts are designated as follows: \cap (exposition, steady part of a theme), $\cap \cap \cap$ (the period of a repeated structure, with two cadences); Π (theme), \neg (introduction), \neg (conclusion) (see scheme 14).
- ¹¹ Some trochaic structures in the music of Debussy are described in: Петрусева 2006: 60–63, chapter *Trajectories: Debussy, Stravinsky, Messiaen (the Phenomenon of Structural Mediation)*.
- ¹² Hemitonics – a system of 12 autonomous semi-tones.
- ¹³ Compare: in an ancient classical music theory the transition was applied to four relations: the genus, the system, structure (from mode to mode), the construction of melodies (Pseudo-Euclid) (see about: Лосев 1979: 559).

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Santrauka

Stravinskis „išlaisvina ritmą iš jo pančių“ – metrinio funkcionalumo. Trijų modelių (liaudies melodijos, raudos ir choralo) pakeitimo proceso rezultatas „Pučiamųjų simfonijose“ yra šis: tempo dramaturgija (idėja, kurią vėliau išplėtojo Olivier Messiaenas ir Pierre’as Boulezas), reguliuojanti tempo atkarpas; ir naujoviška kompozicija, kurioje tempo dramaturgija derinama su tematine architektonika ir ritminių grupių „kontrapunkto strategija“.

Pagrindiniai kūrinių ląstelių vystymo metodai Igorio Stravinskio „Pučiamųjų simfonijose“ (1920) yra šie:

- 1) išplėstinė ritminių grupių variacija (žaidimas netolygiais motyvais, motyvų varijavimas panaudojant akcentus, asimetrinis ritminio vieneto ilginimas ar jo išskaidymas);
- 2) grupių tankio pakeitimai;
- 3) muzikinių vienetų keitimai išlaikant tą pačią ritminę seką;
- 4) ritminio kontrapunkto ir ritminio unisono kaitaliojimas;
- 5) dvigubo ir trigubo metro opozicija keliuose lygmenyse. Stravinskio muzikoje ląstelės galia pasireiškia tuo, kad, būdama ir trumpa, ir ilga, ji geba sugerti viską, kas yra aplink ją, ir sąveikauti su skirtingais muzikos kalbos elementais.

Kita vertus, straipsnyje, pasitelkiant Boulezo Sonatos fortepijonui Nr. 2 (1948) antrąją dalį, nagrinėjama ir Boulezo pristatyta garso reliatyvumo erdvėlaikyje teorija. Pakilimo hierarchija yra sudaryta iš simetriškų serijų – tai susijusių, privilegijuotų eilių, serijinių laukų ir tropų sistema. Ritminė hierarchija paprastai sudaryta iš keturių lygmenų:

- 1) ląstelės (paprastosios – dvejų, trijų, penkių elementų; sudėtingosios – išvestinės struktūros);
- 2) segmentai (į jų sudėtį įeina ir kelios ląstelės);
- 3) ritminiai blokai (į jų sudėtį įeina keli segmentai);

- 4) ritminiai laukai (sudaryti iš kelių blokų: tankis ir garsumas apibūdina laiko lauką kaip hierarchiškai aukštesnę kompozicinės visumos padalą).

Naujasis principas atveria didžiulį ritminių galimybių rezervuarą ir praplečia „grynųjų“ ritmų panaudojimo įvairovę.

Dviejų koncepcijų – įvykio ir nuolatinio sugrįžimo – indetifikavimas atskleidžiamas Johno Cage'o muzikoje ir tekstuose. Šis suvokimas pateikiamas ankstyvuose antrojo Cage'o kūrybinio laikotarpio darbuose (1935–1938). Kompozicijose „Quest“ ir „Two Pieces for Piano“ Cage'o „ritminės faktūros“ yra viršesnės už pačią tematiką. Vėliau konstrukcijos drauge su netikrumu, asmenybės praradimu, ironija, hibridizavimu, karnavališkumu ir kita tapo

postmodernizmo charakteristikomis, kuriomis galėjo remtis mokslininkai.

Naujojo chromatinio tonalumo ir modalumo sintezės sąlygomis Dmitrijus Šostakovičius sukuria dainos formos tradiciją. Pagrindinės Simfonijos Nr. 2 antrosios dalies temos (lyrinio ir filosofinio centro) sudėtyje ryškėja chorėjinis pirmojo tipo metro hipermetras; chorėjinės struktūros – Modesto Musorgskio, Aleksandro Dargomyžskio tradicija (straipsnyje aptariami ritminių periodų suvokimai romanse „Man taip liūdna“), taip pat priskiriamas ir Claude'as Debussy. Hipermetro fenomenas aptinkamas jambinėse struktūrose, ryškiose Piotro Čaikovskio, Aleksandro Glazunovo ir kitų kompozitorių valsuose. Šostakovičius pritaiko hipermetrą chorėjinio metro struktūroms.