

## Principles of Composition and the Structure of Musical Space in Renaissance Polyphony

The development of music of dominant, priority structure suffered an obvious evolution – from the highlighting the separate tone (tenor or *repercussa*) in the medieval monody, later on raising the significance of melody (*cantus firmus* of tenor) in the polyphony of Renaissance up to the entrenchment of accord (main functions – tonic, dominant, subdominant – accords) in the music of New ages. Thus, in the course of centuries, the obviously expressed geometrical shape of the priority material was changing under the influence of evolving musical facture, – from the isolated tones (spot) in the medieval monody and the accentuation of melodic line (line) in the polyphony of Renaissance up to the entrenchment of accord (figure of vertical structure) during New ages.

The geocentric “Symbolic set of mind” that was flourishing in medieval times (J.Huizinga), where the eternal ideas of Plato found their space, was distinguished by the “endless variety of connections of things”<sup>1</sup> and versatile manifestations of symbols. In the course of ages this mindset was experienced the influence of new ideas – in Gothic, it was supplemented by the philosophical idea of Aristotle, revived by Thomas Aquinas, about the hierarchy of entity qualification of several stages, and in Renaissance – the “Symbolic set of mind” was replaced the notion of beauty, based on mathematical proportions. Architect and theoretician of architecture L.B.Alberti in 1460 formulated the Renaissance notion of beauty<sup>2</sup>, where the proportional ratios of parts and entirety, expressed in numbers, are accentuated. This briefly reviewed evolution of outlook assists in the better comprehension and substantiation of main consistent patterns of music development: why the monody of Romanics was directly replaced by the paraphonic multi-voiced music of Gothic, and the latter in turn – the polyphony of Renaissance.

In the conditions of monody it was not possible anymore to implement the cascade hierarchical system of entity, manifested in the outlook, which might reveal itself only by the principle of factual pyramid, formed accordingly – rhythmical mensuration fining down from the bottom to the top – in the substantiated polyphonic music. Also, in the direct interface with the changing outlook in the musical space a coordinate of vertical, raising upwards, emerged, which symbolizes the hierarchical system of entity and later on, in the Renaissance, the vertical and horizontal were joined by the perspective dimension of space which raise was stimulated by the aesthetics based on the perspective mathematical proportions and the example and strive towards the perfect geometrical shape.

As it was possible to ascertain, during the change of outlook the essential features of music are changing, too, along with the principles of its composing, priorities and quality of sound. The change of structures of geometric shape of priorities goes along with the geometric changes of music space.

Drawing the attention towards the complication of musical language that is historically increasing, the American composer and theoretic H.Cowell raised the interface of such historical development with the natural acoustic overtone fining down in intervals<sup>3</sup> – the intervals of octave and unison were prevalent in medieval monody, after the rise of multi-voiced music the fifth and fourth are accentuated, later on – major third etc.<sup>4</sup> Basing on these analogies of natural overtone intervals and musical periods, raised by H.Cowell, and observing the changes of historical formation of musical space, the quantitative interconnections between the intervals that were prevalent in various periods of music development and the dimensions that are molding the musical space, are showing up.

In the Romanic monody the horizontal singleness is being oriented to the unisonous sound, in the Gothic multi-voiced music of two directions – horizontal and vertical – two priority intervals show up – fifth and fourth –, and in three coordinates – horizontal, diagonal and vertical – in the space of Renaissance music three intervals are interacting – pure fourth, major and minor third. As we see, the musical space that limits itself with just one dimension is based on one priority interval, two-dimensional space is getting its sense from two priority intervals, and in three-dimensional musical space three priority intervals are functioning:

**Table No.1**

DIMENSIONS	ONE	TWO	THREE
	Horizontal	Horizontal and vertical	Horizontal, diagonal and vertical
	Unison (octave)	Fifth and fourth	Fourth, major and minor third
INTERVALS	ONE	TWO	THREE

During the formation of three-dimensional musical space, in the epoch of Renaissance the phenomenon of polyphony arises, though the polyphonic facture had appeared already in Gothic. The term “polyphonia”, defining the “music of few voices” was used in the tract of Johannes’ “Summa musicæ” (about 1200). By concretizing the number of participating voices, the theoretician distinguished “dyaphonia”, “triphonia” and “tetraphonia”. Starting with A.Kircher<sup>5</sup> and Fr.W.Marpurg<sup>6</sup>, the term “polyphony” was used to describe the musical piece of few voices of equal significance. Synonymously to the term of polyphony, the term “counterpoint”<sup>7</sup> was used. The term of polyphony was used to define the multi-voiced composition, and the term of counterpoint – for the process of voice composition and theory, which was directly related to the rules of harmony.

W.Apel<sup>8</sup> was treating the term of polyphony in a more broad sense than the term “counterpoint”, stating that the multi-voiced medieval music is not yet a counterpoint that G.P.da Palestrina or J.S.Bach were creating.

As well as in the art, three-dimensional space in music was formed in the epoch of Renaissance. Discussing the medieval multi-voiced music one must note that until the musical space was not replenished by the third – diagonal – coordinate, one cannot talk reasonably about the real value functioning of the polyphony.

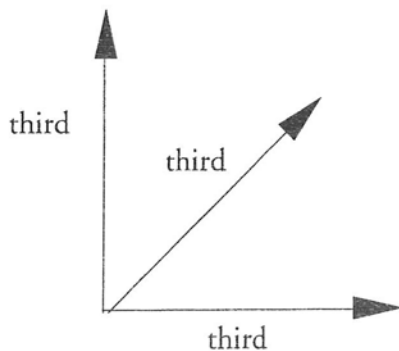
The interconnections between the musical voices of early Middle-Ages are best described by the term “paraphony”<sup>9</sup>, i.e. more or less parallel movement of two or more voices. Starting with the organum which personifies the most simple and pure type of paraphony, where the voices are moving parallelly, creating the interval of pure fourth or fifth between themselves, the paraphony evolved and transformed itself into more complex interrelations of voices in the genre of motet. Yet, though lately the more distinctive differences in the movement of voices are demonstrated, but by orienting the free voices towards the melodic line of the main voice – tenor – and in the absence of the perspective coordinate of diagonal, there is not rather substantial basis to discuss the independence of melody lines that is functionally distinctive.

Discussing the “*Musica composita*” of the end of 13th century and beginning of the 14th, T.Dubravskaya notes that “as a result of connecting few intervals, the multi-voiced combinations are being formed, the interchanging of which was oriented not towards the functionally organized harmonic unions, but towards the melody sinuosities of a single, main voice”<sup>10</sup>. Thus, other voices that take part in the musical facture are derived directly from the main voice, countening to it in certain interval(s) and submitting themselves to the melody development of the first voice, thus they cannot be treated as separate and independent. The multi-voiced music of this period cannot be named as polyphonic, because the voices that comprise it are playing the role of variant repeating the tenor melody line in the vertical, and they cannot be considered as the independent melody lines featuring the characteristic focus. After forming the multi-voiced music in Gothic and the coordinate of vertical along it, the paraphonic relations of variantic voices start to evolve towards the direction of much more complex interconnections – the preconditions for the third spatial dimensions of music arise, and the formation of phenomenon of polyphony along with it, too. One of main factors of this evolution is the increasing prevalence of imperfect consonants – third and sixth, which has influenced the formation of various melody lines in the musical facture. Under the influence of such process of development, the paraphony of Gothic evolved into the polyphony of Renaissance, where the coordinate of diagonal started functioning that formed the three-dimensional music space.

It is regular that in the course of centuries the comprehension of dissonance and consonance of chimes, perfection and imperfection of consonances was shifting. During of period the exact consonance might be regarded as dissonance and during the other – the same consonance might be regarded as consonance. The development of treating of historically changing consonances was going along from the dissonance towards the consonance, i.e. in the course of time the consonances that formerly were considered as dissonances, started to treat as consonances. The interval of fourth suffered the process of development of evaluation in the opposite direction – at the beginning it was attributed to the category of consonances, and later on – to the dissonances.

All the above-mentioned changes in the musical space are to be linked to the development of the priorities of intervalics. It is not accidental that in the polyphonic music of the Renaissance the priority of third emerges in combination with the interval of pure fourth, which in the works of musical theory is still traditionally called the perfect consonance, but is treated in the practice of music as the dissonance. The interval of third becomes the basis for the forming of all three dimensions. It gives a sense to the perspective dimension, expression of melodic lines, possibilities of their interconnection. It also influences the emerge of imitation that is the generator and modeler of the coordinate of diagonal.

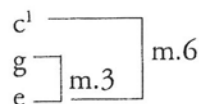
### Diagram No.1



Because of the priority of the third interval in the epoch of Renaissance the writing of music in separate voices becomes possible, by refusing the score and relying on universal consonant features of third. In the 15th century the successive conception of inscribing the polyphonic music gained the ground. N.Burtius in his work “Opusculum” (II/5) described the counterpoint relations of voices in the conditions of three-voice structure, stating that *cantus* is combined to tenor, and “*cantra autem bassus*”, as the voice that was inscribed at the latest point, must already be in tune with two voices already available<sup>11</sup>. The theoretician stated in his statement that *contrabassus* must construct the suitable “*contrapunctus respectu omnium*”, but not, for instance, “*respectu tenoris*”.

The valid concept of inscribing the polyphony was also described by the theoretic and composer of the Renaissance Fr.Gaffurius in his tract “*Practica musicae*” (1496, II/10), emphasizing that tenor in the polyphonic music (is) “*fundamentum relationis ist*”<sup>12</sup>. After inscribing the tenor and prefiguring the plan of its imitation, the melodic lines of all the rest voices were being created; at the end of creative process the harmonic relations of separate voices were tuned up. One can think that the creation of the polyphonic music composition was starting in the horizontal, and ended in the vertical.

The previous priority of perfect vertical in the area of harmonious consonances in this time is replaced the prevalence of structures imperfect vertical. Imperfectly consonating interval of third substantiates fauxbourdon and gimel. G.Zarlino in 1558 presented the definition of perfect harmony of the Renaissance – *harmonia perfetta* (“third plus fifth or sixth”) – and at the same time the evaluation of priority harmonic structure:



It is as if the gimele of third and sixth at the same time, and sixth is the reverse of the third interval, as if her reflection in the mirror. Thus making the interval of third and its reverse – sixth – from the same sound, we will get the vertical harmonious consonance of fauxbourdon.

Thirdizomelic tenor polyphony (a term of R.Janeliauskas<sup>13</sup>) was composed starting with tenor, i.e. *cantus firmus*, in the melody of which the role of third interval, rather closely interacting with second, is actualized. Third together with second creates the character of melody flow, and it also forms its “geometric” shape in musical space, by performing a function of expanding the volume of melody. One must note that in the melody line the most highlighted sounds are underlining the basic grounds of the third intervals, and these sounds that form the basic grounds for the third intervals were considered by composers as main ones, that form the melody of *cantus firmus*. By the way, as *cantus firmus* a certain melody was selected which had the hidden or obvious carcass of the third interval.

On the example of *cantus firmus* melody, the melodies of free voices were formed in an analogous way because the tertial sounds take a stronger rhythmical value, they are continued longer, retained, repeated. These sounds of every voice are sharpened by metro-rhythmic means of organizing the architectonic melodic and the arrangement of the text syllables. Such carcass of melody lines based on third intervals obviously demonstrated the principal variance of the priority third interval.

The coordinate of vertical is also based on third interval. The harmonious chimes that prevail in polyphony are consisting of third and its reverse (sixth, decima) with any sound, doubled through the octave. Thus, in vertical also the main principle of third variance, arising from the melody of *cantus firmus*, is active.

The parameter of diagonal shows itself due to the precise and not precise imitations and canons. The imitativeness in the melodic line shows itself due to the tiercizomelia, when, according to the spiral principle the same intonation returns back again and again, thus the imitation forms itself through a distance. The entries of voices of a music composition after pauses, the imitational formations, characteristic rhythm-intonational figures appearing in various voices are fixing the phenomena of third (sixth, decima) interval in this parameter.

The preeminence of one interval (and its transpositions) in the melodic of polyphonic music of the Renaissance moulds the intonational homogeneity, in harmonic – the indiscreetness of consonating chimes, creating the impression of constant recurrence of the melodic material in such a way. The panostinaticity in three-dimensional polyphonic space, or, in other words, tiercian izomelia, generated by *cantus firmus*, – it is the essential principle of composing the polyphonic music of Renaissance.

Thus in all the parameters the interval of third plays a leading role, variably molding and substantiating all the three-dimensional space of polyphony.

## References

- <sup>1</sup> Huizinga J. *Viduramžių ruduo*. – Vilnius, 1996. – 258 psl.
- <sup>2</sup> Beauty is “the art of conformation between the parts and harmony with the entirety, which was derived according to a certain number, special proportion and arrangement as the proportionality requires, i.e. the most perfect and ultimate law of nature.” (“eine Art Übereinstimmung und ein Zusammenklang der Teile zu einem Ganzen, das nach einer bestimmten Zahl, einer besonderen Beziehung und Anordnung ausgeführt wurde, wie es das Ebenmaß, das heißt das vollkommenste und oberste Naturgesetz fordert”. – quott. Acc. Rempp Fr. *Elementar- und Satzlehre von Tinctoris bis Zarlino*. – S.50-51 // *Geschichte der Musik*, B.7).
- <sup>3</sup> Cowell H. *New Musical Resources*. – Cambridge, 1930. – p. 3, 12-21.
- <sup>4</sup> The idea of the interface between the historical periods and the natural acoustic overtone of H.Cowell was developed by J.Chailley in “Expliquer l’harmonie” (1967) and J. Cholopov in his article “Изменяющееся и неизменное в эволюции музыкального мышления”, that was published in the issue “Проблемы традиций и новаторства в современной музыке” (1982).
- <sup>5</sup> *Musurgia universalis sive ars magna consoni et dissoni* (1650).
- <sup>6</sup> *Kritische Einleitung in die Geschichte und Lehrsätze der alten und neuen Musik* (1759).
- <sup>7</sup> Dr. Webster’s *Complete Dictionary of the English Language*, ed. C.A. Goodrich and N. Porter (1864).
- <sup>8</sup> *Harvard Dictionary of Music* (1944).
- <sup>9</sup> “Paraphonie – die Parallelbewegung der Stimmen im Organum” (“Parafonija – the parallel movement of voices in organum”) – Seeger H. *Musiklexikon*. – Leipzig, 1966. We would propose to treat this definition in a slightly broader sense, discussing the composing principle of all the medieval music and interconnections of voices.
- <sup>10</sup> Дубравская Т. Н. *Музыка эпохи Возрождения. XVI век // История полифонии*, вып. 26 – Москва, 1996. – 8 с.
- <sup>11</sup> “Nam supranus ad tenorem remissus: contrapunctus erit superacutus. Tenor vero ad contrabassum: erit contrapunctus acutus. Contra autem bassus gravis erit contrapunctus respectu omnium, quia in infima parte collocatus.”
- <sup>12</sup> “Concordes sonos in contrapuncto notulis cantus plani tanquam tenori ac relationis fundamento Musici diversi modi solent ascribere.”
- <sup>13</sup> Janeliauskas R. *Komponavimo principų sistematikos pradmenys // Muzikos komponavimo principai. Teorija ir praktika*, I. Vilnius, 2000.

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## **Principles of Composition and the Structure of Musical Space in Renaissance Polyphony**

### **Summary**

In the development of music, dominant, priority structures underwent an evident purposeful evolution – from the revelation of a separate tone in medieval monody, later the attachment of significance to melody in Renaissance polyphony to the dominance of chord in the music of the New ages. In the course of ages, a geometric shape, evidently expressed by priority material, experienced changes under the influence of the evolutionizing texture of music. The structural shift of the geometrical shape of priorities was taking place simultaneously with geometrical changes of musical space. A coordinate of an upwards ascending vertical emerged in a musical space, and later on, in the Renaissance, a horizontal and vertical were joined by a perspective space dimension, which was determined by the aesthetics based on perspective mathematical proportions as well as an example and aim of the perfect geometric space.

In the Renaissance epoch, it was an interval at a third that gave sense to the expression of melodic patterns, the possibilities for their reciprocal linking, influenced the imitation performing the function of the generating and modelling diagonal coordinate and served as the basis for all three dimensions of musical space. The priority of an interval at a third in Renaissance polyphony made possible to write down music in separate voices, giving up the full score and relying on universal peculiarities of consonating at a third.

## **Komponavimo principai ir muzikos erdvės struktūra renesanso polifonijoje**

### **Santrauka**

Dominuojančios, prioritinės struktūros muzikos raidoje patyrė akivaizdžią kryptingą evoliuciją – nuo atskiro tono išryškinimo viduramžių monodijoje, vėliau melodijos svarbos iškelimo renesanso polifonijoje iki akordo įsigalėjimo Naujųjų amžių muzikoje. Bėgant amžiams, keitėsi prioritinės medžiagos akivaizdžiai išreikštas geometrinis pavidalas, veikiamas evoliucionuojančios muzikos faktūros. Prioritetų geometrinio pavidalo struktūrų kaita vyko kartu su muzikos erdvės geometriniais pokyčiais. Muzikos erdvėje užgimė aukštyn kylančios vertikalės koordinatė, o vėliau, renesanse, prie horizontalės ir vertikalės prisijungė erdvės perspektyvinė dimensija, kurios atsiradimą sąlygojo perspektyvinėmis matematinėmis proporcijomis grindžiama estetika ir tobulos geometrinės erdvės pavyzdys bei siekis.

Renesanso epochoje visų trijų muzikos erdvės dimensijų pagrindu tapo tercijos intervalas, kuris įprasmino melodinių linijų raišką, jų jungimo tarpusavyje galimybes, įtakojo imitacijos, atliekančios diagonalės koordinatės generavimo ir modeliavimo funkciją, atsiradimą. Dėl tercijos intervalo prioriteto renesanso polifonijoje tapo įmanomas daugiabalsės muzikos užrašymas atskirais balsais, atsisakant partitūros ir pasikliaujant universaliomis tercijos konsonavimo savybėmis.