Sound architecture of Rytis Mažulis' microstructural canons (from 100 to the 3,448275862 cents)

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By focusing my view on the Rytis Mažulis' microdimensional compositions written in the last decade, I will try to spotlight different aspects of their creative background: the composer's micro-interval ideology, the technological *inventio*, premises for compositional integrity, and European creative/theoretical/scientific resonances.

Key words: Rytis Mažulis, canon, mensurals, micro-intervals, micro-durations, fractals, palindrome

Within the scope of modern Lithuanian music we could find composers who are grouped according to the principle of cubic forms: rhombic, triangular, hexagonal figures. Undoubtedly such associations are modelled along similar premises, which once upon a time structured the French Six, the spectralists, and their followers – Kaija Saariaho, Philippe Hurel and Marc-André Dalbavie. From the point of view of technological aspirations and creative motivation, conspicuous on the Lithuanian landscape are the radical triangle of the forty year-olds Ričardas Kabelis, Šarūnas Nakas, and Rytis Mažulis. These composers could be related by a specific microscopy of sound depth, manipulation by sound measures not encountered in Lithuanian music before, proportional modeling of material, the phenomenon of polytempo, conceptualized macroforms as well as intellectual way of composing. I would like to talk about one of the personalities of this triangle, composer Rytis Mažulis, whose works are referred to by keywords such as canon, mensurals, micro-intervals, micro-durations, fractals, and palindrome. By focusing my view on the microdimensional compositions written in the last decade, I will try to spotlight three different aspects of their creative background: composer's micro-interval ideology, the technological *inventio* (that is, the things invented or, more generally, inventiveness as such), premises for compositional integrity, and European creative/theoretical/scientific resonances.

First let's discuss the question of Rytis Mažulis' worship of the microscopy of sounds, since an overwhelming passion for microstructures is often something more than simply a statement of fact. If we speak of micro-intervals, for me an indelible example would be the famous public debate, a passionate defence of two separate points of view, *i.e*., was the music of the day purely diatonic, or was there an interaction of ancient chromatic and enharmonic types (genes) as well? – which took place in Rome on the 4th of June 1551 between Vicente Lusitano and Nicola Vicentino. Vicentino upheld the latter view, lost the argument, and had to pay the appropriate fine. Not long afterwards, not only the debaters, but arbiters Ghisilino Dancerts and Bartolomeo Esgobedo as well, each published a theoretical treatise, vehemently defending their own points of view. The Lusitano–Vicentino dispute was described in detail by both of its judges in Ghisilino Dancerts' and Bartolomeo Esgobedo's treatise entitled "*Trattato sopra una differentia musicale*" (1551, manuscript). It was also written up by Vicentino himself in the influential treatise "*L'antica musica ridotta alla moderna practica*" (1555), IV/43; in a treatise by Ercole Bottrigari entitled "*Melone*" (written in 1591, published in 1602), and others[1].

Speaking of beliefs widespread among the early 20th-century composers, we may note that Webern's elegantly triggering "*Neue Musik*" was to a great extent overshadowed by the uproarious futurist slogan "*Freie Musik*" (Nikolai Kulbin)[2] and the unabashedly radical proposal of Feruccio Busoni to revise the overexploited system of 12-tone temperament by introducing a system of small perfect intervals apart, each endowed with the distinctive character[3]. The quartertones, employed by Charles Ives in his *Symphony No. 4* (1909–1916) and "*Three quartertone pieces for piano*" (1923–1924), were also clinging in the ear as a response to the poetico-philosophical utopias of the American transcendentalism and its "*Weltklang*" idea[4].

Although this happened back in the 16th century and the beginning of the 20th century, micro-interval music didn't arrive on the Lithuanian scene until the 20th century, during the inter-war period, together with Alois Hábo's pupil, Jeronimas Kačinskas. Unfortunately, the finished quartertone pieces, such as Trio No. 1 for trumpet, viola and piano (1933), did not only see their world premieres but also their scores were lost in the turmoil of events and times. Kačinskas himself soon became part of the Lithuanian exodus and left behind more of a halo of a fascinating fact rather than any real creative influence.

When exploring the microstructural space of Mažulis' pieces, one is struck with the sudden revelation that it is not quite the daring undertakings of Nicola Vicentino, Alois Hába, Jeronimas Kačinskas or a number of spectralist composers that encouraged Mažulis to deal with the unexploited measurements of sound, but the insistent genetic obligation, which had been fortuitously encrypted in the name of the composer. I would venture to explain the invasion of micro-dimensional structures in Mažulis' music with the supposition that he might have been provoked by the easily translatable semantic meaning of his own surname. "Matutinus parvulus" – was both a witty and a meaningful Latin reference to the composer's name and surname, made during a presentation by Jonas Vilimas. The friendly jest could in fact serve as a conceptual code underlying Mažulis' microstructures. It's no surprise that both the image of "mažas", "mažylis", "mažulis" – "child" (in various Lithuanian diminutive forms) and the verbal structure, which have become central in the composer's scrupulously selected verbal texts, are also read in various languages in his works, including, for example, in French, in the text of Oskaras Milašius' poem entitled "*Talita cumi*": ("Enfant! C'est une douleur que l'on n'exprime"), or in Latin, in the lines from the Ist letter to the Corinthians, used in Mažulis' opus "*Cum esse parvulus*":

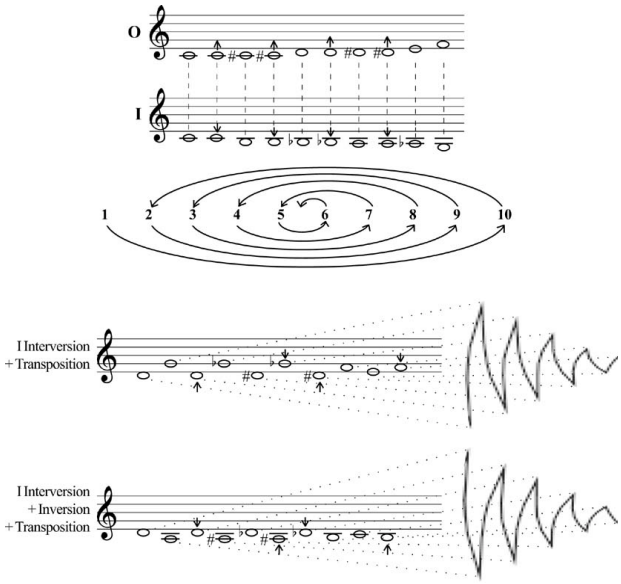
Cum essem parvulus,	(When I was a child,)
Loquebar ut parvulus,	(I talked like a child,)
Sapiebam ut parvulus,	(I thought like a child,)
Cogitabam ut parvulus.	(I reasoned like a child.)
	(1 Cor 13, 11–12)

The microstructure motivation in Mažulis' music could also be confirmed by technological 15–16th century manuscript authorizations, wherein micro--intervals are described by formulations such as "minute parts of the tone", where "*minute*" – "mažas" again coincides with the literal meaning of Mažulis' surname. However, if we follow a strict theoretical tradition, the small, the little – "mažas" in Mažulis' works would not mean the Latin "***tonus***", but a "***semitonus***" division, because for the composer's micro-interval ideology is a microscopy not of tone, but of semitone. His varied pitch vocabulary ranges from the structures made of piles of superimposed thirds ("*Clavier of Pure Reason*", for computer; 1992–1994; "*Canon aenigmaticus*", for computer; 1990–1992), a spiral series of whole-tone scales (endless spiral canon for 4 equal voices "*The Dazzled Eye Has Lost Its Speech*", 1985) and chromatic scale to the microtones obtained by the 30-fold fraction of a semitone. Incidentally, speaking about Mažulis' microstructural music, I would like to stress that the widespread concept „microtone" was criticized by Walter Gieseler who states that separate tone can be „silent" or „high", but cannot be "micro", because the size ("magnitude") of elementary units can be identified only with relation to two or more sounds. Consequently, Gieseler suggests using the concept "microinterval"[5]. A number of Mažulis' pieces written in the last decade, although put in unchronological succession, make up the picture of a progressively increasing division of a semitone into still smaller microintervals, starting with the semitones in "*Hanon virtualis*" (for computer & video; 2002). Thus in the works being analyzed we will meet: quartertones – *duo partes de semitono* (in "*Mensurations*"), quartertones and octatones – *quattuor partes de semitono* (in "*Palindrome*"), decatones – *quinque partes de semitono* (in "*Cum essem parvulus*"), and ending up with the irrational 30-fold fractions into 29 intervals – *triginta partes de semitono* (in "*Talita cumi*").

Now let's try to define this composer's relationship with the traditions of micro-interval divisions and follow certain landmarks regarding his choices. The first of Mažulis' decisions invariably had to follow on the choice between the two possibilities – equal and unequal – of decomposing semitones, which in fact is a conceptual choice between two influential traditions – let's say, on the one hand, we can have the ***small*** or ***large*** diesis of Vicentino and unequal micro-intervals in harmonic spectral zones of the spectralists (Tristan Murail, Gérard Grisey, Claude Vivier). And, at the same time, we can choose between an equal (äquidistance) prerogative vis-à-vis division and its tradition, starting with the logarithmic (äquidistance) decomposition of the octave, an improvement in 1666 by Lemme Rossi on Vicentino's 31 divisions of sound. Having chosen the logarithmic model, the composer is authorized by yet another decision, for it is upon the attitude regarding the "atwelve system"[6] that the direction for the revision of the idiom of 12 sounds in an octave depends. Hence another two possibilities: the first indicates the direction regarding sound ***increase***

from the 12 sound system, *e.g.*, towards 13 equal intervals in the octave in E. Křenek's "*Spiritus intelligentiae Sanctus*" (1955). The other, the opposite direction, indicates a tendency to ***decrease*** sounds, relative to the 12 sound octave idiom. For example, Sylvia Fomina's equidistant pentatonic system (the octave being divided into 5 equal intervals) in her composition *"Im halbdunkel"* for 12 strings, 1991. Falling in with Lemme Rossi and Ernst Křenek at this juncture, Rytis Mažulis goes on to arrange his own micro-interval opuses. His compositions may be seen as certain sonic projects overlaid with clear, nearly invisible drawing lines. In the process of analysis these finely chiselled sound architectures immediately fall into geometrical shapes of palindromes: diagonally and vertically running currents of sounds are either interlaced with the manifold spirals of inversions (*e.g.*, "*Mensurations*", "*Talita cumi*") or become slurred through the pendulum movement of melodic progressions ("*Palindrome"*).

The first of them, "*Mensurations*" (for fl-cl-va--vc-pf; 1992), I would treat as an example of the re-evolution of a Renaissance proportional canon technique[7]. It is a totally modern opus, whose material is derived on the principle of *Ex una voce*, and which reinterprets the technique of Franco-Flemish composers. The work seems to grow out of an ultrachromatic (according to Wyschnegradskij) tenor – a sequentially ascending scale of 9 quartertones and 1 semitone (from C to F) – which, together with its inversion, produces the composition's entire world of sound (Example 1).



Example 1

Mažulis uses Messiaen's interversion technique (see "*Ile de Feu" II*, 1949) in modelling the sound suites for the 10 section "*Mensurations*" form. The composer sequentially transposes and later in the score implements original and inversion sound-line variants extracted via an centripetal interversion spiral process, in a *per canonem aut subscriptionem* manner.

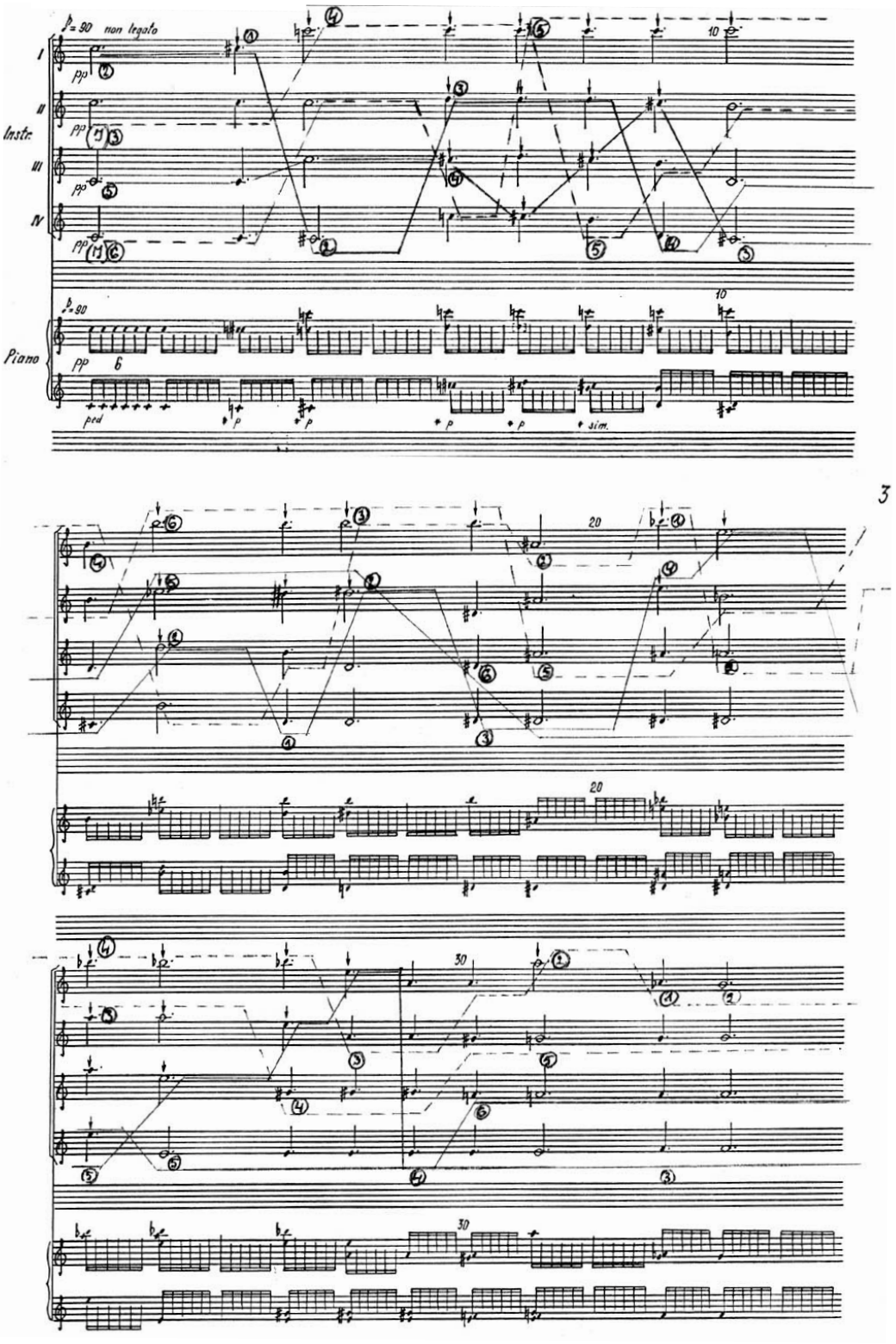
Let's study the proportional mensurals of the first form section. An analysis shows that both ascending (marked in a continuing line) and descending (marked in a dotted line) quarter-tone scales function according to certain rhythmic progressions. If we take the dotted quarter note as an accountable unit of time-values, then, for example, the third voice will move in the following proportions: 5:4:3:2:1:2:3:4:5:6:5 and so on (Example 2).

The rhythmic progression system of the mensurals of this opus – the square – explains not only the compositional logic of the modern mensural canon, but also the specific symmetry (palindrome) of the interchange of harmonies in this particular work. Further examples will prove that this constructive decision is an important one in Mažulis' work (Example 3).

In "*Talita cumi*" (sound installation for 6 persons, computer, tape; 1997), written for ***artificial*** voices, the text – taken from Oskaras Milašius (Oscar Milosz, France) – inspired the composer to microscopic sound divisions and would appear to have led him to the spatial threshold of unreal sound. By persistently modelling the design of sound's inner space and aiming to re-encode its meaning, Mažulis celebrates the rituals of a semitone microscopy, which involve logarithmic (equidistant) partitioning and division of the given macrostructure (mostly, a crotchet) into fragments of irrational values. By stepping into the depths of the semitone, Mažulis in a sense accepted I. Wyschnegradskij's concept of ultrachromatics, which makes analogies between the ultrachromatics of ***pitches*** and lengths of the notes – *i.e.* it is the interaction of Tonhöhen- and Tondauerkontinuum which creates the space of a cyclical sound[8]. Having decomposed the semitone **A–G sharp** in "*Talita cumi*" into equal parts – and modelled the 30-microelement series, Mažulis ends up with only 29 micro-intervals (Kleinstintervallen, according W. Gieseler), whose size is approximately 3.45 ***cents*** (Example 4).

The semitone in this composition is the macrostructure of devided ***pitches***, based on an analogous scale of macro-time-values; here it becomes a quarter-note. Having decomposed the quarter into 96 micro-duration (*beats per quarter-note)* gradations, out of the microstructures Mažulis also models a 30 element-long series, which functions as a centripetal interversion cycle (Example 5).

The music of "*Talita cumi*" is constructed of three indentical melodies which are performed in parallel minor thirds in different tempos, therefore performance is possible in a form of recording. The only live performers are six women who silently whisper



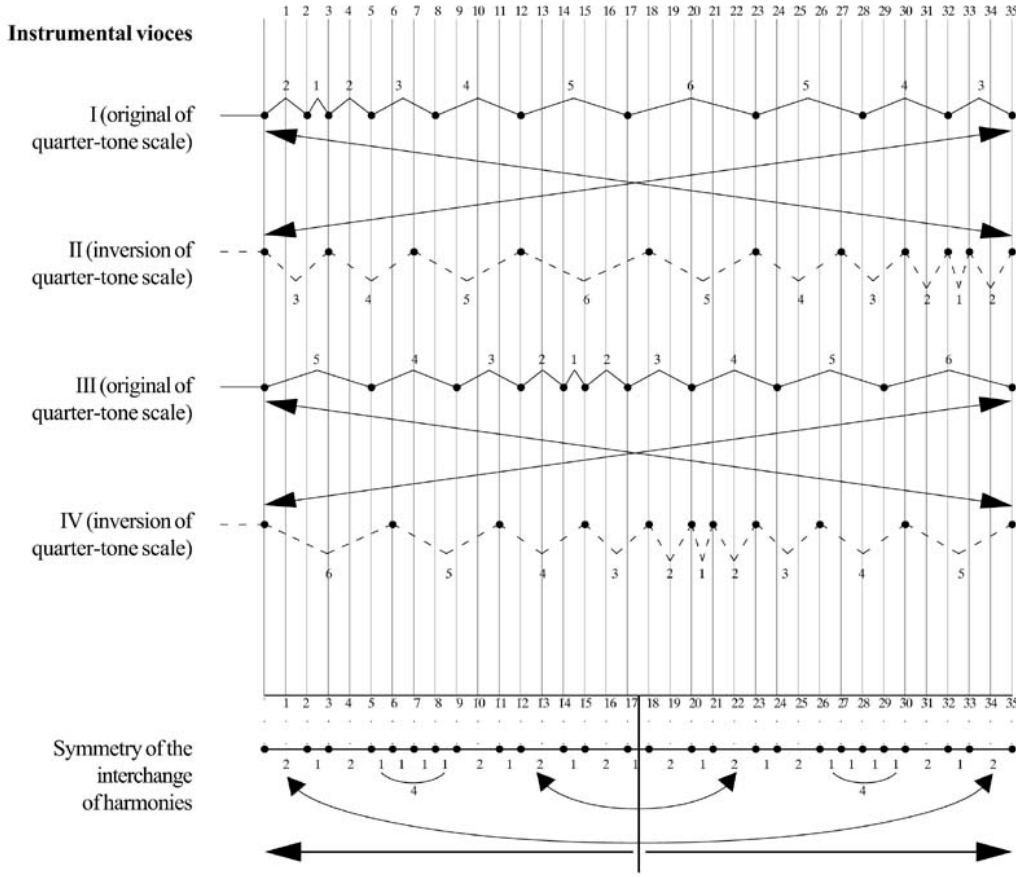
Example 2

syllables from the text by Milašius while the music is performed. And yet these microstructures, decomposed by centrifugal permutational forces, are perceived as elongated or simply crushed measures of sound depth, rotating on a fatalistic carousel of irrational dimensions. Mažulis called this the "tragedy of live sound", its collapse, for in this score live sound is truly dead (and it's not by chance that the work was performed at the "Musica ficta" festival in Vilnius in 1997).

However, even while the tragedy of live sound in "*Talita cumi*" was in its ripening stages, Rytis Mažulis

The structure of the mensurals' proportions of the I[st] form sections

(1 = ♩. – dotted quarter note)



Square of fluctuation of mensures

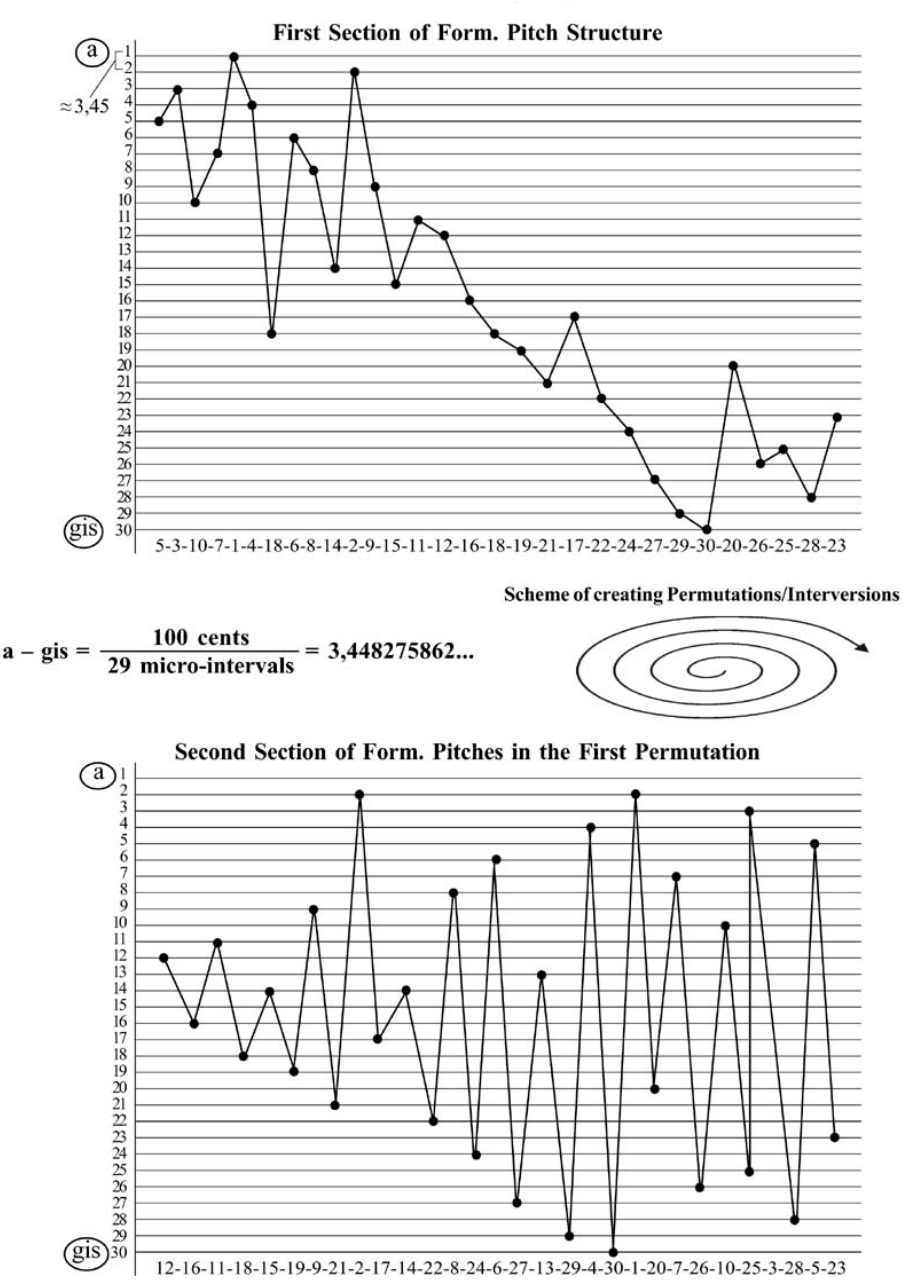
	6	5	4	3	2	1	2	3	4	5 = 35
	5	4	3	2	1	2	3	4	5	6
	4	3	2	1	2	3	4	5	6	5
	3	2	1	2	3	4	5	6	5	4
	2	1	2	3	4	5	6	5	4	3
	1	2	3	4	5	6	5	4	3	2
	2	3	4	5	6	5	4	3	2	1
	3	4	5	6	5	4	3	2	1	2
35 =	4	5	6	5	4	3	2	1	2	3
	5	6	5	4	3	2	1	2	3	4
	= 35									

Example 3

began experimenting with other, one-centre (one sound) generated sound technologies. One could almost visualize the sound-scape of "*Palindrome*" (1996), written for computerized piano, as a moving quarter- and eight-tone pendulum (Example 6).

It would appear that this time Mažulis actually "enlarged" the pendulum – or fan – fragment, which had already been created in the first interversion of the *"Mensurations"* pitches and even earlier, in Messiaen's "*Ile de Feu*" *II* first interversion of time-values, dynamics and pitches (Example 7). The swinging centre is the sound **G sharp** forming 672 sound melody amplitudes, which, having reached their maximum scope, naturally return to the primary sound static. In organizing these canons vis-à-vis his material, Mažulis "clipped" it into 70 segments, out of which he modelled the constructions of his own canons (Example 8).

Incidentally, the score of the opus is written traditionally, in a ***quadruplo*** augmentation manner of pitches. Note that the relationship of voice durations is expressed in proportions which are characteristic of 15th century traditions[9] – for example, inversion of *proportio dupla* 2:1 in sections 5, 6, 7, 8, 9, 15; inversion of *proportio sesquiquarta* (3:2) in sections 10, 11, 12 and so on.



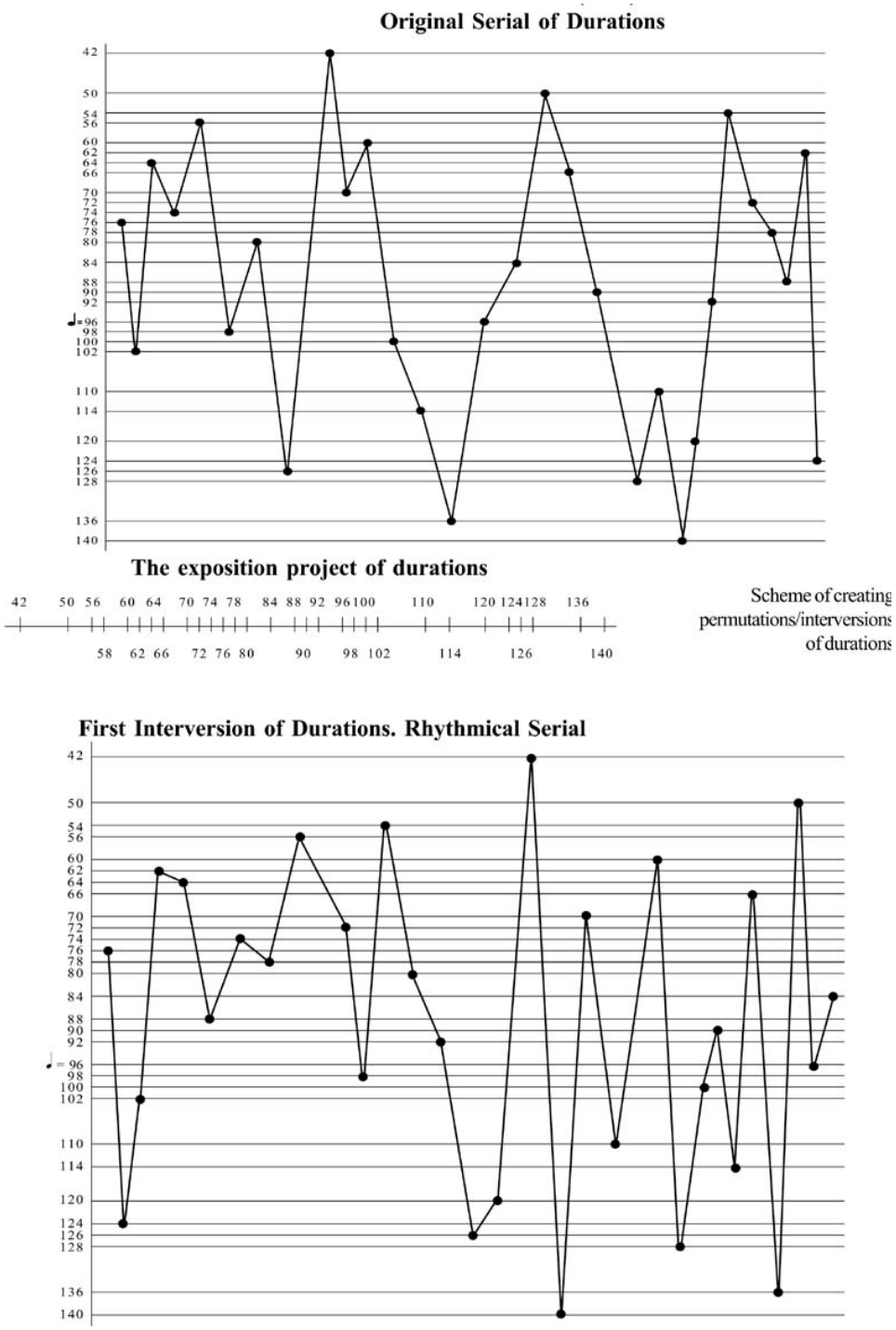
Example 4

However, the melodic steps of Mažulis' pendulum are modelled on a common motivating principle, with the end of each step initiating the beginning of the following step[10]. Thus we can look upon the abstract traces of the melody as phenomena of a recursive process, far from an ideal point of view, recursive segments of such micro-intervals can be endless – akin to a fractal standard (Example 9).

The length of the edge of the snowflake (its so-called Koch curve), which Helga von Koch traced in 1904, is significant in that it is infinite.). It is well known that fractal geometry is capable of describing to the understanding of complex structures in inorganic systems, *i.e.* the shorelines, aggregation, electrodeposition and random dendritic growth and so on. I would like to show one sophisticated example of fractal structure in *Sordaria macrospora* mycelia growth. A scientist group from the Institute of Biochemistry and Endocrinology in Giesen (Germany) headed by Martin Obert proved the theory of geometrical growth principle in their study, where *Sordaria macrospora* mycelia were analyzed for 7 hours[11]. The drawing shows a fractal image of this study (Example 10).

As we know, the fractal principle is being ever more actively integrated into musical compositions. For example, the recursive steps in Charle Dodge's 1984 "*Profile*"[12] (written according to Koch's snowflake prototype) generate hierarchical structures of the volume and tempo of sounds, and in Per Nørgård's compositions the hierarchical structures of an endless line (series) of sounds (see his famous composition "*Voyage into the Golden Screen*", 1967 II part, theme of flute). At the IRCAM studio in 1992, Tistan Murail calculated five abstract tempo fractal sub-sections for his "*Serendib*" composition. To return to Mažulis' "*Palindrome*", I should mention that the quarter- and eight-tone canons also model a perfect palindrome form[13], which is absolutely binary and concentric, has multi-component mirror symmetry, and organizes all structural elements along a cancer-like principle.

Apparently the most autobiographical of Mažulis' compositions, "*Cum essem parvulus*" (2001), was written to be performed by the Neue Vokalsolisten Stuttgart. Incidentally in Mažulis' works, the tactic behind the choice of the size ("magnitude") of elementary units, like an inspiration itself, has most often depended on which medium of performance



Example 5

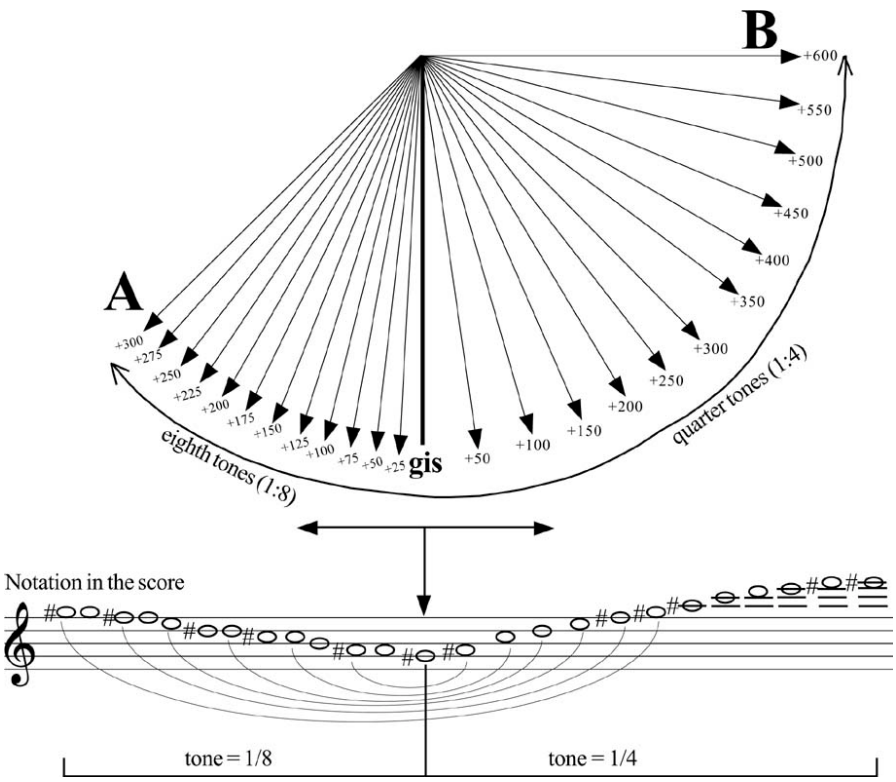
organization of polytemporal canons. Along with these developments, his micro- and macrodimensional canons came to resonate with the guidelines of some pioneering artistic and scientific hypotheses: Ivan Wyshnegradskis ultrachromatic analogies between pitch and duration, Henry Cowell's theory of chromatic tempos as well as their practical applications in the music of Sylvano Bussotti and Conlon Nancarrow.

Seeking to find prototypes of combinations of micro-intervals and polytempos, this time we will have to go back to one of the earliest examples – to Sylvano Bussotti's 1962 "*Siciliano*" for 12 male voices, which was referred to in the book by Sigrun Schneider[14] (Example 11).

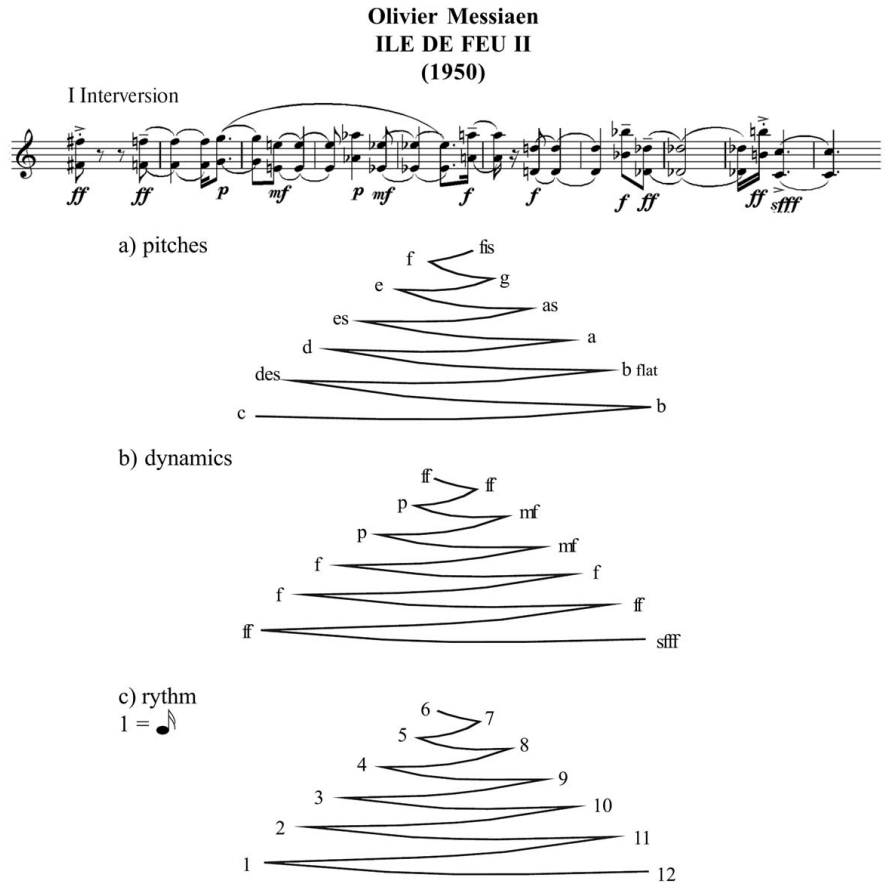
In his opus, having conditionally reversed the fast-slow tempo poles, Mažulis models a characteristically tentone (decatones) spectrum palindrome, on the basis of a strict program of shifting tempos (Example 12).

The soundscape which I would endeavour to describe as analogous to a progressing cluster. Incidentally, back in 1912, Henry Cowell's definition of a circumscribed cluster was appended by H. Kaufmann, who noted, after György Ligeti's analysis of "*Atmosphères*", that microtones can in fact be integrated into the structure of a cluster. Musicologists argue today, if Karlheinz Stokhausen had seen Henry Cowell's polychromatic tables of tempos (see: Henry Cowell "*New Musical Resources*", 1919, published 1930)[15] before composing his "*Gruppen*" for 3 Orchestra or before writing his

he would prefer – acoustic or electronic, on expectations and/or disappointments at the execution of material, be it realized with the aid of computer or performed by live performers (*e.g.*, *Court-Circuit* and *Neue Vokalsolisten Stuttgart, Latvian radio Chamber Singers*). An analysis of the piece "*Cum essem parvulus*" and the recent works of Rytis Mažulis, written in the last decade, shows an obvious transformation of the proportional-mensural principle of a canon and the increasing tendency towards fractal



Example 6



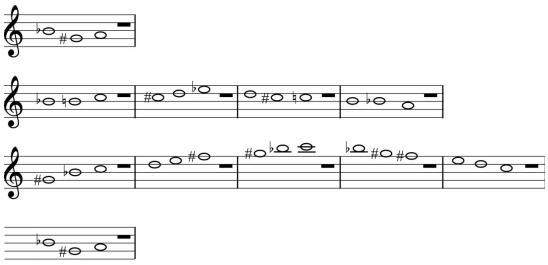
Example 7

famous article "Wie die Zeit vergeht" in 1957. As to Conlon Nancarrow's creation, Kyle Geen, the biographer and researcher of Nancarrow's music, verifies that when composing, for example, "*Study No. 37*" – it is 12 polytempo canons – *for Player Piano*, Nancarrow's room walls were decorated with schemes of Henry Cowell[16].

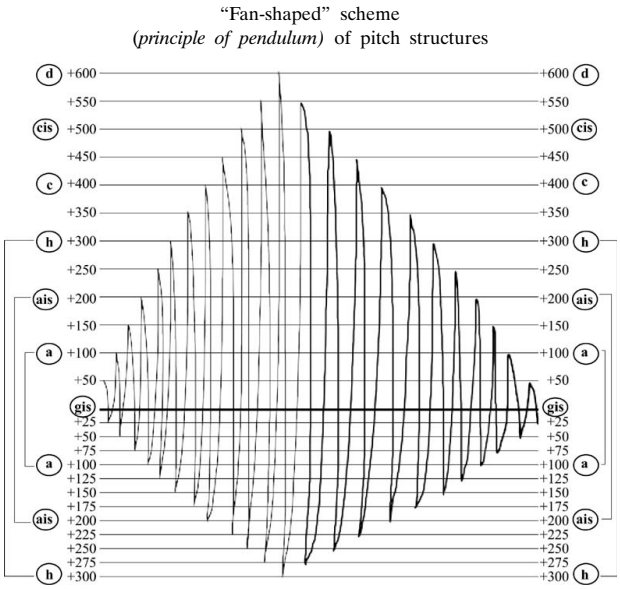
Mažulis' "*Cum essem parvulus*" polytempo premise arose, by the way, not as a result of Henry Cowell's chromatic tempo divisions, but as a result of simple "thrifty" calculation and the condition that every one of the 8 voices in the vocal can sing the same 10 sounds in 12 (2nd baritone), in 11 (1st baritone), in 10 (2nd tenor), and the fastest (1st soprano) – in 5 seconds. In the drawing we can see the palindrome "*Cum essem parvulus*" macro-cluster (Example 13).

I would conditionally call its variable harmonic tension a palindrome micro-harmonic and micro-ryhtmic relief, whose volume-contour is defined by the tight lines of the two perimeter voices. The nearest, in the cluster classification, to Mažulis' "*Cum essem parvulus*" macro-cluster definition would probably be Boulez's "Musikdenken Heute-1" (Mainz, 1963, S. 29), which noted the affinity of vertical and diagonal sound series, where in the vertical dimension we have a cluster and in the diagonal – glissando. In the case of Mažulis' composition, we can conditionally apply Mauricio Kagel's second cluster qualification group – Bewegliche Ton-Cluster[17].

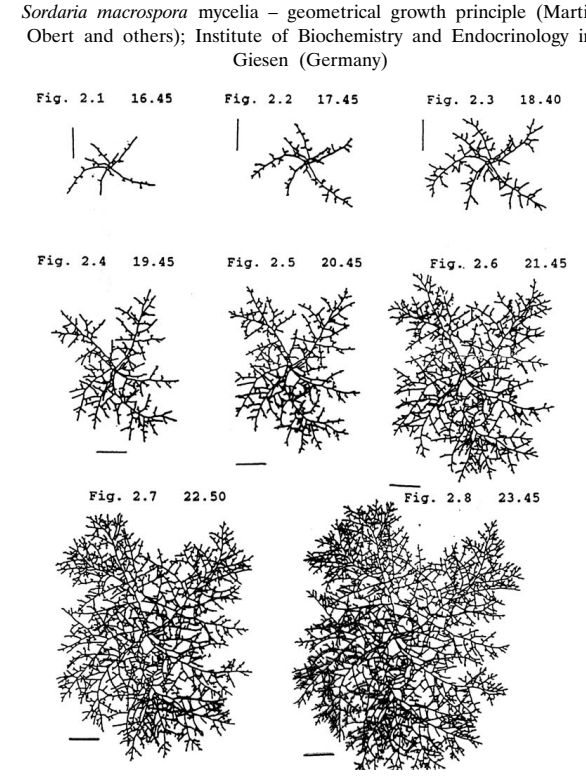
Moreover, by persistently penetrating into the depths of



Example 8



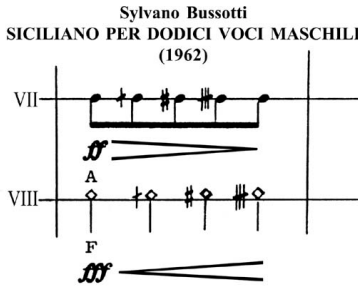
Example 9



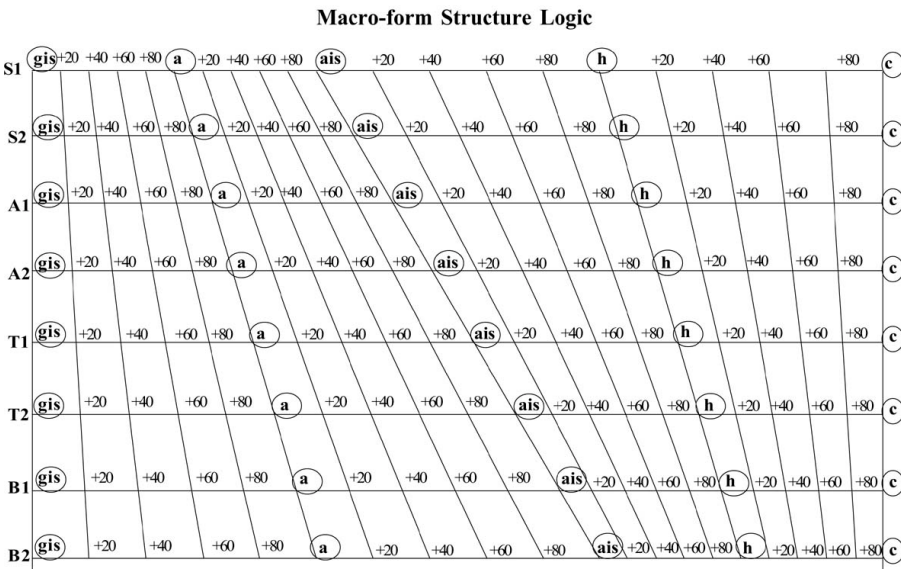
Example 10

sound, Rytis Mažulis has repeatedly overstepped the liminal bounds of comprehension. His sound philosophy and technologies it implies, adorations and aspirations seem to be suspended somewhere midway between the intersecting highways of modernism and postmodernism. Modernist nihilism is not characteristic of his approach to cultural traditions. Contrariwise, he unearths musical objects irrespective of their location in time, whose active connotations radiate the rational self-regulating orderliness. These objects serve as certain compositional ideas and ready-made constructs, which resonate within the complex of the composer's own ideas: he employs them as they are, regenerates, integrates, rounds them out with the sound material more in tune with the times, uses them as a basis for developing and experimenting with the new compositional techniques. Mažulis applies the same procedures to decoding resonances coming from the Renaissance, which include the mensural polylogue of different tempos, perfectly matching proportions of micro- and macro-structures, head-on collisions of infinitesimal durations in polytemporal settings, and totalising symmetry of forms. All these selected ideas, however, are being reproduced in the manner of a structuralist who adheres to the purity of style, relies on the driving force of intellectual construction, and misgives the form which is not predetermined from beginning to end. The search for a common denominator, some universal technique and a formal prototype that would suit his music has led Mažulis to the choice and revival of the canonic technique. And, at the same time, it prompted his ideal: pliant, technically constructed "pure music", which came to be an emblematic dominant of his work.

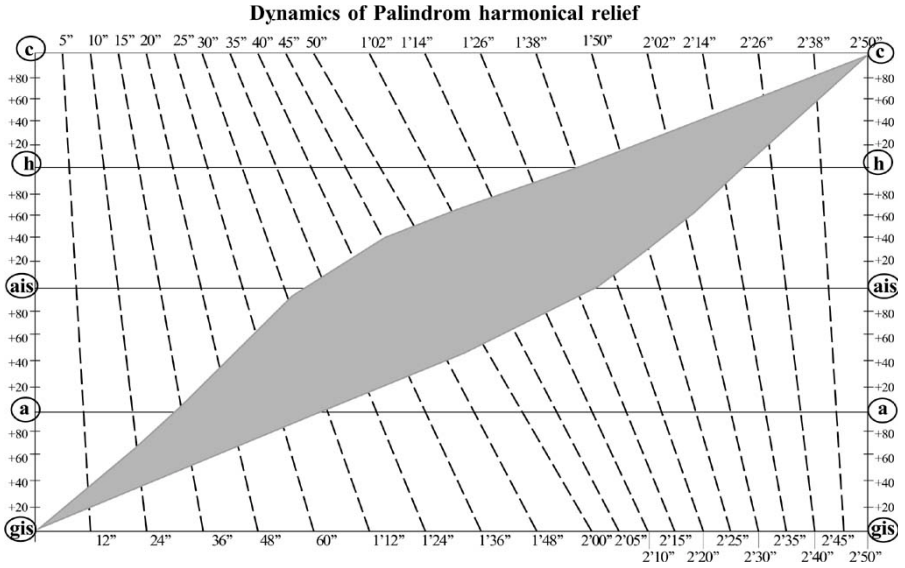
The electrifying, "charged" sound architectures, as witnessed by the composer himself, are being composed with the utmost emotionality, mental tension, and undergo formalization based on highly rigoristic procedures. So, although it might seem wildly complicated, Rytis Mažulis' (Matutinus Parvulus) one sound and semitone music, with its exceptionally clear constructions, undoubtedly resonates the epistemics of our time, including all of its artistic knowledge, intuition, and resonating



Example 11



Example 12



Example 13

common ideas. Its unrhetorical grammar and digital mechanics can, however, create music which is brimming with strong emotion, and which, according to György Ligeti, can be arranged along very strict sound structures.

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[4] Ward Charles V., Charles Ives concept of Musik, *Current Musicology*, Vol. 18, 1974, S. 114.

[5] See: Gieseler Walter. Kritische Anmerkungen zur Komposition mit Kleinstintervallen, *Forum: Microtonality today – Perspectives in New music*, Vol. 29; 1991/1, S. 159–172.

[6] "Atwelve system and atwelve tone" (a concept used by composer Julia Werntz), see Julia Werntz. Additing Pitches: Some New Thoughts, Ten Years After. Perspectives of New Music's Forum: Microtonality Today, *Perspectives of New Music*, Vol. 39, No. 2, Summer 2001, p. 159–210.

[7] See: P. Urquhart, Canon, Partial Signatures, and "Musica Ficta" in Works by Josquin Deprez and his Contemporaries, Cambridge, Mass., 1988.

[8] Ivan Wyschnegradskij was experimenting with an ultrachromatic system even prior to 1920, and was very consistently developing the ideas of Leningrad's microtone music enthusiasts. Wyschnegradskij experimented and created using the most popular tone divisions of the time, *i.e.,* tone divided into 1/3, 1/4, 1/6, 1/8, 1/12 parts. His ultrachromatic theory was published in two studies: "*Quelques considerations sur l'emploi des quarts de ton en musique*", Paris, 1927, and "*Manuel d'Harmonie ą quarts de ton*", Paris, 1932.

[9] Philippe de Vitry has been ascribed the author of *tempus perfectum*, *imperfectum*, and proportional relations constructions. Tempo proportions common to 15th century traditions were described for the first time in 1408 by Prosdocimo de' Beldomandi in "*Tractatus practice cantus mensurabilis*", see: Turner Charles. Proportion and form in the continental isorhythmic motet ca. 1365–1450, *Music analysis*, Bd. 10, 1991, No. 1–2, S. 89–124.

[10] Fagarazzi Bruno, A Fractal Approach to Musical Composition, *Fractals in the Fundament and Applied Sciences*, Elservier Sciences Publishers B. V. (North-Holland), IFIP, 199, p. 135–146.

[11] See: Obert Martin, Sernetz Manfred, Neuschulz Ute, Comparision of different Microbial growth Patterns Described by Fractal Geometry, *Fractals in the fundamental and Applied Sciences,* H.-O. Peitgen, J. M. Hen-

riques & L. F. Penedo (Editors) Elsevier Science Publishers B. V. (North-Holland), IFIP, 1991, p. 293–298.

[12] Charles Dodge, Profile: A Music Fractal, *Computer Music Journal*, Vol. 12, Number 3, Fall 1988, p. 10–14.

[13] Gr., Palindrom, or Palindromon – running back, returning. A concept describing cancerous-symmetrical (M. Tarakanov's concept) or more precisely, mirror-like–cancerous (V. Cholopova's concept) forms, Russian musicology unified it as "concentric forms"; foreign scientists use the term "Plan of arch". See: Goncharenko S. S., *Zerkalnaja simmetrija v muzyke,* Науч. ред. М. Е. Тараканов, Новосибирск, 1993.

[14] Schneider Sigrun, *Mikrotöne in der Musik des 20. Jahrhunderts*, Bonn – Bad Godesberg, 1975, S. 220–221.

[15] Cowell Henry, *New Musical Resources.* With notes and accompanying essay by David Nicholls, Cambridge Univ. Press, 1996 (first published 1930).

[16] Gann Kyle, *The Music of Conlon Nancarrow*, Cambridge Univ. Press, 1995, p. 193–194.

[17] See: Cluster (Christoph von Blumröder), *Handwörterbuch der musikalischen Terminologie*, 31 Auslieferung, Bd. 2, Franz Steiner Verlag, Stuttgart, 2001.

Gražina Daunoravičienė

RYČIO MAŽULIO MIKROSTRUKTŪRINIŲ KANONŲ GARSINĖ ARCHITEKTŪRA (NUO 100 IKI 3,448275862 CENTO)

S a n t r a u k a

Lietuvos šiuolaikinės muzikos peizaže galime įžvelgti kubistinių formų principu susibūrusias kompozitorių figūras. Radikaliųjų keturiasdešimtmečių – R. Kabelio, Š. Nako ir R. Mažulio trejetą suformavo specifinė garso gelmės mikroskopija, manipuliavimas lietuvių muzikoje nepalytėtais garso dydžiais, proporcinis medžiagos konstruktyvizmas, politempiškumo bei konceptualizuotų makroformų fenomenas, taip pat intelektualus komponavimas. Straipsnyje tyrinėjama pastarojo dešimtmečio R. Mažulio mikrostruktūrinė kūryba, išryškint mikrodimensijų ideologijos, technologinio *inventio*, kompozicinio integralumo prielaidas bei kūrybinių idėjų rezonansų aspektus.

Garsų mikroskopijos adoracija R. Mažulio muzikoje aiškintina ne vien istorinių precedentų (N. Vicentino, „Freie Musik" (N. Kulbin), F. Busoni, Ch. Iveso akceptuojama „Weltklang" idėja ir kt.) paskatomis. Lietuviškoji mikrointervalų muzikos tradicija užgimė XX a. tarpukariu į Kauną sugrįžus A. Hábos mokiniui Jeronimui Kačinskui. Tačiau jo užbaigti ketvirtatonių kūriniai (pvz., Trio Nr. 1, 1933) ne tik nebuvo atlikti, dingo jų partitūros, o patsai J. Kačinskas netrukus tapo lietuviškojo egzodo figūra. Spėjama, kad mikrodimensinių struktūrų invaziją R. Mažulio muzikoje galėjusi išprovokuoti lengvai išverčiamos kompozitoriaus pavardės reikšminė prasmė: *Matutinus Parvulus* (Jono Vilimo lotyniškai perskaitytas kompozitoriaus vardas ir pavardė) gali praversti kaip konceptualus genetinis R. Mažulio mikrostruktūrų adoracijos užkodavimas. XX a. paskutiniojo dešimtmečio R. Mažulio kompozicijų spektras atskleidžia smulkėjančių (ne chronologiškai) pustonio divizijų vaizdą: pustoniai (100 centų) – „Hanon virtualis", ketvirtatoniai (50 centų) – „Mensurations", ketvirtatoniai ir aštuntatoniai (50 centų ir 25 centų) „Palindrome", dešimtatoniai (20 centų) – „Cum essem parvulus" ir iracionalios trisdešimtosios „Talita cumi" pustonio dalys (arba 29 iracionalių dydžių mikrointervalai – 3,448275862 cento). Beje, „mažo", „mažylio", „mažulio", t. y. „vaiko", įvaizdis bei verbali struktūra tapusi kompozitoriaus skrupulingai parenkamų žodinių tekstų centrais. Mikrostruktūrų motyvaciją R. Mažulio muzikoje gali paliudyti ir technologiniai XV–XVI a. teorinių traktatų įgaliojimai, kur mikrointervalai apibrėžiami tokiomis formuluotėmis, kaip „minute parts of the tone", kur „minute" (mažas) sutampa su prasmine R. Mažulio pavardės reikšme.

Kompozitoriaus santykį su mikrointervalų darybos tradicijomis jo kūrybos procese sąlygoja du sprendimai. Pirma, renkantis tarp galimybės pustonį skaidyti į lygias (L. Rossi tradicija) ir nelygias (Vicentino, spektralistų Murail, Grisey, Vivier tradicija) dalis. Antra, išreiškiant savo požiūrį į „nedvylikos sistemą" (*atwelve system*). Tai 12 garsų (12 lygių chromatinių pustonių) oktavoje idiomos revidavimo strategija, XX a. muzikoje vykstanti dviem priešingomis kryptimis: garsų skaičiaus didėjimo (pvz., E. Křenek'o „Spiritus intelligentiae Sanctus" (1955) ir garsų skaičiaus mažėjimo (pvz., S. Fomina'os ekvidistancinės pentatonikos „Im halbdunkel", 1991). Pasirinkęs logaritminį (*äquidistance*) pustonio skaidymo modelį bei radikalią mikrostruktūrų skaičiau didėjimo nuostatą, R. Mažulis per dešimtmetį sukūrė daugelį savo mikrostruktūrinių opusų.

R. Mažulio „Mensurations" (1992) priskirtinas prie Renesanso proporcionalių kanonų technikos reevoliucijos pavyzdžių, kurio medžiaga išvedama remiantis *Ex una voce* principu. Šio kūrinio ultrachromatinis tenoras (nuosekliai kylanti 9 ketvirtatonių + 1 pustonio skalė nuo c iki f) kartu su savo inversija nuoseklių transpozicijų būdu formuoja viso kūrinio garsyno erdvę. Dešimties sekcijų *Mensurations* makroforma modeliuojama kompozitoriaus naudojamos Messiaeno interversijų technikos (žr. *Ile de Feu II*, 1949) būdu, ketvirtatoninėms skalėms funkcionuojant tam tikrų ritminių progresijų algoritmais.

Žengdamas į Lietuvoje dar „nepalytėtą" pustonio gelmę, „Talita cumi" (1997) R. Mažulis akceptavo Wyschnegradskio ultrachromatizmo idėją, kuri siūlo analogizuoti skambesio aukščių bei trukmių mikrostruktūras. Šioje partitūroje aukščių (pustonis a-gis) bei trukmės (ketvirtinė) makrostruktūros skaidomos į 30 (29 mikrointervalų (3,45 cento) ir į 96 (*beats per quarter-note)* dalių. Gautos mikrodimensijos modeliuoja 30 elementų aukščių/trukmių serijas, kurios funkcionuoja iš(į)centrinių interversijų būdu. Tad permutacinės jėgos išsvaidytos „Talita cumi" mikrostruktūros suvokiamos kaip ištempti, ar tiesiog sugniužduoti garso gelmės matai, kurie sukasi fatališkoje iracionalių dimensijų karuselėje. R. Mažulis tai pavadino „gyvo garso tragedija", jo sudužimu, mirtimi, nes šioje partitūroje natūralų akustinį garsą keičia fiktyvaus kompiuterio išskaidyto garso šleifai.

Dar tebekurdamas „Talita cumi" R. Mažulis pradėjo eksperimentuoti su naujomis, iš vieno centro (garso) generuojančiomis garsų technologijomis. „Palindromo" (1996) garsavaizdžio prielaidą galima įsivaizduoti beveik vizualiai – kaip ketvirtatonių bei aštuntatonių skalėmis judančios švytuoklės produkuojamas garsines struktūras. Išsiūbuotas centras (gis) suformuoja 672 garsų melodijos amplitudes, kurios, pasiekusios apimties maksimumą, natūraliai grįžta į pirminio garso statiką, taip užprogramuodamos tobulą

simetrišką opuso formą. Keturgubos aukščių augmentacijos būdu užrašytoje partitūroje balsų trukmių santykiai išreiškiami XV a. tradicijai būdingomis tempo proporcijomis. Į R. Mažulio sumodeliuotos švytuoklės melodinius žingsnius galima žvelgti kaip į fraktalų rekursinių procesų apraiškas. Tai atliepia naująsias dabarties muzikos tendencijas, fraktalinės geometrijos principą aktyviai integruojant į muzikos kompozicijas (pvz., Ch. Dodge „Profile“, P. Nørgård'o begalinės garsų eilės, žr. „Voyage into the Golden Screen“, T. Murail „Serendib“ ir kt.). R. Mažulio „Palindromo“ ketvirtatonių bei aštuntatonių fraktaliniai kanonai sumodeliuoja tobulą palindromo formą, kuriai būdingas absoliutus binariškumas, koncentriškumas, daugiakomponentė veidrodinė simetrija bei vėžio principu organizuojami visi struktūriniai elementai.

Autobiografiškiausios R. Mažulio kompozicijos „Cum essem parvulus“ (2001) analizė rodo akivaizdžią menzūrinio kanono principo transformaciją, jo kūryboje toliau įsitvirtinant fraktalinio pobūdžio politempo kanonams. Ieškodami ankstyvųjų mikrointervalų bei politempo derinio prototipų kaip pavyzdį nurodysime S. Bussotti „Siciliano“ (1962). Sumodeliavęs griežtą greito – lėto tempo apgręžimo projektą, „Cum essem parvulus“ kompoziciją R. Mažulis sukuria kaip dešimtatonių spektro palindromą. Gaudamas panašų rezultatą, kurį užprogramavo Henry Cowello chromatinės tempo divizijos ar Conlono Nancarrowo 12-os politempų kanonai (pvz., jo „Study No. 37 for Player Piano“), kūrybos procese R. Mažulis vadovavosi kitomis projektinėmis prielaidomis. Palindrominės „Cum essem parvulus“ formos skambesio įspūdį apibūdinčiau kaip progresuojančio mikrostruktūrų klasterio analogiją.

Atrodytų be galo sudėtinga, tačiau itin skaidrių konstrukcijų R. Mažulio (*Matutinus Parvulus*) pustonio/vieno garso muzika rezonuoja mūsų laikmečio kultūros epistemą ir jos meninius žinojimus, nuojautas ar bendrų idėjų rezonansus. Neretorinė kompozitoriaus gramatika bei naudojami skaitmeniniai mechanizmai gali kurti stipraus jausmo sklidiną muziką, nes ir jausmas, pasak György Ligeti, gali būti struktūruojamas itin griežtomis garsinėmis priemonėmis.