

Microdimensional Shaping of Glissando: Nakas's *Nude* (2004), Janulytė's *Radiance* (2015), and Mažulis's *Solipse* (2018)

Abstract. In 1991, Douglas Keislar, the editor of the Perspectives of New Music journal forum that dealt with the issues of microtonality, raised the question “Why the interest in new tunings?” and noted that “nonstandard tunings offer a means to breathe new life into minimalism”. One should agree that composing with microtones re-emerged in Lithuanian music in the last decades of the 20th century as a response to the impulses of the international avant-garde. Attempting to systematize the ways of microtone integration in Lithuanian music scores, one would distinguish two directions principally based on ornamental and structural approach, resulting in the expansion and enrichment of major-minor system as well as using microintervals as independent elements of the system or joined with other techniques such as serialism, minimalism etc. The article provides the examples with a detailed comment on the music of Lithuanian composer Šarūnas Nakas, Justė Janulytė and Rytis Mažulis.

Keywords: microtone, quarter-tone, microdimensional glissando, Šarūnas Nakas, Justė Janulytė, Rytis Mažulis.

In the last decades of the twentieth century, microtonality, as a way of music composing, re-experienced a growing interest. In 1991, the Perspectives of New Music journal initiated a special chapter dedicated to the questions of microtonality in today's music. Douglas Keislar, the editor of the forum and author of the introductory text, raised the question “Why the interest in new tunings?” One of the encouragements, to a large extent, was the influence of rapid progress in information technologies. As Keislar pointed out, “computers and microprocessor-controlled instruments have alleviated the problem of performance difficulty” (Keislar 1991: 174). Aesthetic flexibility was another factor in the revival of microtonality because “nonstandard tunings offer a means to breathe new life into minimalism” (Ibid.). Here a remark by Hugues Dufourt comes to mind, which states that in the last decades of the twentieth century, the musical/sound space was perceived as “an element of new sound plastic”. The latter quotation by Dufourt comes from his book *Musique, pouvoir, écriture* (1991), where Dufourt captured the rich contexts and music aesthetics of Paris group L'Itinéraire (also represented by Tristan Murail, Roger Tessier, Gérard Grisey, Michaël Levinas), later labeled as spectralism.¹ One should have to say that the idea of sound plasticity was soaring in the atmosphere more broadly, e.g. at the time, Horațiu Rădulescu raised his idea of sound plasma, publishing a fascinating theoretical text, which he called “a prose composition and a piece of music simultaneously”, in 1975.² Another example comes from French composer Pascal Criton, who focused on microtonal harmonies as well and has stated about her 1980s piano pieces that she claimed “to reach molecular material, to fluidify the material of sound” (Dosse 2010: 446).

However, the characterization of microtonal music and composing with microtones remains under consideration. In general, the diversity of descriptions is typical of naming the microtone phenomena itself. According to Lydia Ayers's listing in her 1994 thesis, we find several alternatives to cover the term “microtonal” (Pertout 2007: 1):³ “tuning”; “microintervals”; “macrointervals” (or “macrotones”); “omnitonal”; “omnisonics”; “neoharmonic”; “xenharmonic”; “exploring the sonic spectrum”; and non-twelve”. The latter concept prompts us to add the term “atwelve-tone” (“atwelve-tonality”), which in 2001 was proposed by Julia Werntz, an American composer and musicologist and a representative of the Boston Microtonal Society to generalize the harmonies mismatching the 12-tone model (Werntz 2001: 189–90). The provided listing may include some earlier dated references such as: “quarter-tone” (as common as “microtone”), which theoreticians used as early as the seventeenth and eighteenth centuries to explain the ratio between enharmonic diesis and flat; “achromatic”, which was chosen by Behrens-Senegalden to explain his quarter-tone experiments with instruments in 1892; “bichromatic”, used by Willi Möllendorff in his 1917 text; and Wyschnegradsky's visionary idea of “ultrachromatics” from the 1920s that brings together several interrelating micro-dimensions, and thus the microintervallic domain becomes inseparable without the micro-rhythmic and micro-durational techniques.

¹ A quotation by Dufourt was presented in an interview by Lithuanian musicologist Vita Gruodytė with composer Justė Janulytė (Gruodytė 2013: 38).

² Horațiu Rădulescu's *Sound Plasma: Music of the Future Sign*, Munich: Edition Modern, 1975. The text itself was completed two years earlier, in 1973.

³ Adrián Pertout refers to Lydia Ayers' DMA thesis *Exploring Microtonal Tunings: A Kaleidoscope of Extended Just Tunings and their Compositional Applications* (University of Illinois, Urbana-Champaign, 1994: 1–2).

But while Ayers advocates for the term “omnitonal”, San Diego composer Ivor Darreg exploits the Greek word *xenharmonic* as “especially apt for radically different tunings” (Keislar 1991: 173), yet, as Navid Bargrizan has noted, “these different systems have one characteristic in common: they all reject the dominance of twelve-tone equal temperament and attempt to break through its limited, monolithic scope”.⁴ Thus it would be accurate to say that the variety in the names for the microtone phenomenon reflects the multiplicity of the ways microtones are expressed in music texture. However, the most common is the focus on the music interval alongside the division of the octave, which may be represented in different models like various results of equal division as well as historically fixed and artificial tunings featuring microtonal relations (e.g. for Gardner Read, who attempted to collect the types of microtones in his book on microtonal notation [Read 1990], a starting point is the division of the octave).

The presented observations allow me to discuss probably the most general viewpoint regarding the use of microtones that I call a bipartite approach. For example, William Reilly Ayers focuses on two groups of composers who “desire an *expanded* musical palette” and those who look for “an *altered* one” (Ayers 2018: 1), while Julia Werntz proposes “division between composers using just intonation and those choosing to ‘add pitches’ to the usual twelve-tone scale”, i.e. a *rejection*/correction and simple *expansion* of the established 12-tone equal temperament (Werntz 2001). One could add Frank Denyer’s “distinction between the ‘tuned’ (using justly tuned intervals) and ‘untuned’ (not using justly tuned intervals)” (Ayers 2018: 4), as well as Georg Friedrich Haas’s distinction between *evenly* and *unevenly* structured music scales (Haas 2003). Furthermore, I would provide an observation by Lithuanian composer Rytis Mažulis, the brightest figure in Lithuanian contemporary music, who faithfully deals with microtones in his oeuvre: “The composer, who decides to deal with microtones in his composition, should first make a choice whether he is going to use microtones as a *decorative tool* or as a *structural element*” (Mažulis 2015: 159) [italics by R. P.]. Elaborating the latter statement by Mažulis, I would suggest a framework for classifying cases of micro/quarter-tone application in works by Lithuanian contemporary composers, from Kačinskas’s experiments to the compositions of today, by distinguishing between two groups with generally juxtaposing compositional intentions: 1) decorative/non-systematic and 2) structural/systematic application of microtones.

1. Non-systematic type includes the occasional and sporadic employment of micro/quarter-tones, mostly for coloristic purposes such as an aspiration to add some variety to the traditional 12-note musical texture; such integration of micro/quarter-tones results in the coloring of traditional harmony and even evokes disorder (or accidental/false sound).⁵ The ways micro/quarter-tones can be integrated for this purpose include the following:

- ornamentation, “inflection” of traditional tones/pitches, creating effects close to, for example, a traditional trill or vibrato;
- coloring of unison with subtle deviations, i.e. “multiplication” of unison when the main tone/pitch is surrounded by its “doppelgängers”, in other words, secondary tones/pitches, though attributed to the main tone-field, deviate from the central tone by distances smaller than a semitone;
- creation of a sleek transition from tone to tone, i.e. emphasizing microtonal transition, inserting additional pitches in between the semitones and thus creating an effect of smooth and sleek glissando;
- preference for employment of un(de)tuned (non-clear or even “false”) harmony, creating unclear chords, seeking to escape from the still-potent remnants of the classical tradition;
- stylization of sound by inserting certain tones/pitches typical of non-Western harmonies.

2. The systematic type includes music scores based on a particular type of logic and a system applied to the whole musical work. This can be achieved using the following:

- employment of a certain scale that already exists or is specially designed and consists of microtonal relationships, etc.;
- application of a specific tuning based on or with added microtones;

⁴ Cited from Navid Bargrizan’s course description on intonations, tunings, scales, and microtonality in Euro-American art music, https://www.navidbargrizan.com/uploads/5/4/8/1/54814981/bargrizan-syeminar_in_microtonality_tuning_and_intonation.pdf, access: 28.10.2020.

⁵ As Antanas Kučinskas, a composer and musicologist, pointed out, Lithuanian composers mainly tend to use microtones in order to avoid/reduce the sense of tonality or tonal sound (Kučinskas 2003: 13).

- application of the glissando phenomena as the overall model; that is, the principle of glissando in parallel to certain compositional rules determines the whole structure of the composition;
- creation of an all-encompassing compositional system, combining different parameters and creating a micro-dimensional network.

Later in my article, I focus on music scores by three Lithuanian composers, Šarūnas Nakas (b. 1962), Justė Janulytė (b. 1982) and Rytis Mažulis (b. 1961), providing the creative treatment of glissando as an overall construction for music composition.

Microdimensional Shaping of Glissando. Case studies

Šarūnas Nakas's *Nude* for symphony orchestra (2004)

The search for new types of expression exploiting various treatments of sound is typical of Šarūnas Nakas's, who has earned a reputation as a "transgressor" of accepted norms, presented his innovative works based on Dada, Merz and the ideas of futurism as early as in the 1980s, music. Thus the use of quarter-tones is sequential in his music experiments as well. Nakas's *Wings to Cross the Abyss* for alto saxophone (1996) along with the three-part cycle for ensemble, *Chronon* (1992–1996), namely in part one, *Sources. Birds*, and part three, *Sea. Sky*, present a systematic use of quarter-tones employing the 24-TET⁶ division throughout the work alongside a serial-like approach. Among other bright examples of the systemic use of 24-TET in Nakas's oeuvre that were carried out later, I would mention the pieces for ensemble, *Aporia* (2001) and *Eyes Dazzled by the North* (2004), as well as his symphonic score *Nude*, composed in 2004. The latter composition exposes the principle of glissando designing the overall structure of the opening section, which manifests as a constantly enlarging "sound cloud" in the strings and is based on precisely written out quarter-tones creating an ascending and descending glissando-like effect centered around its axis (pitch B3).⁷

The composition of the introduction reveals a rationalized and precise calculation typical of Nakas. In the span of 36 bars, the Lithuanian composer designed 19 simultaneously sounding quarter-tone lines performed by 19 string instruments. All instruments start their quarter-tone ascent or descent from the same pitch, the initial B3. Gradually moving further, the parallel melodies arrive at the final chord/cluster consisting of 19 tones and ranging from D2 to G5# (see Fig. 1 and 2). Moreover, the principle of gradual motion is applied to the level of dynamics, creating a sequence of dynamic markings from *ppp* to *ff* with the climax in m. 21 (that is very close to the golden section). Looking at two-tone clusters appearing in the most important

locations of the introduction (that is, climax and final chord) we come to the symmetric structure forming around the centre – the initial tone B3 (see Fig. 3; the symmetrical shape of "growing" glissando cluster in mm. 1–36 is represented in Fig. 4).

Figure 1. Nakas's *Nude* (2004). Fragments of the introduction: mm. 1–6, entrance of strings; m. 21, dynamic climax and chord structure; mm. 33–36, final cluster of 19 tones from D2 to G5# concluding the quarter-tone glissando.

⁶ 24-tone equal temperament.

⁷ For indicating certain pitch I apply the International Standards Organization (ISO) system for register designations where the middle C is C4.



Figure 2. Nakas's *Nude* (2004). Ascending scale in 1st violin part, creating quarter-tone glissando, mm. 1–36.

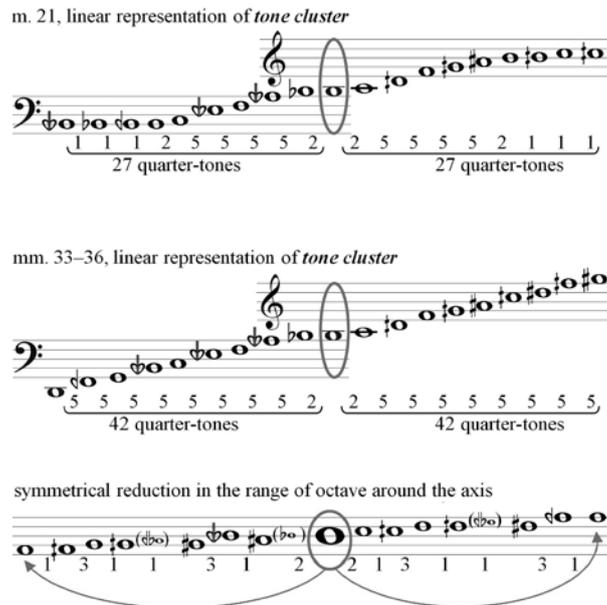


Figure 3. Nakas's *Nude* (2004). Linear representation of tone cluster in m. 21 and mm. 33–36, and symmetrical scale in the range of octave around B3. Numbers 1, 2, 3, and 5 indicate the distance of quarter-tones.

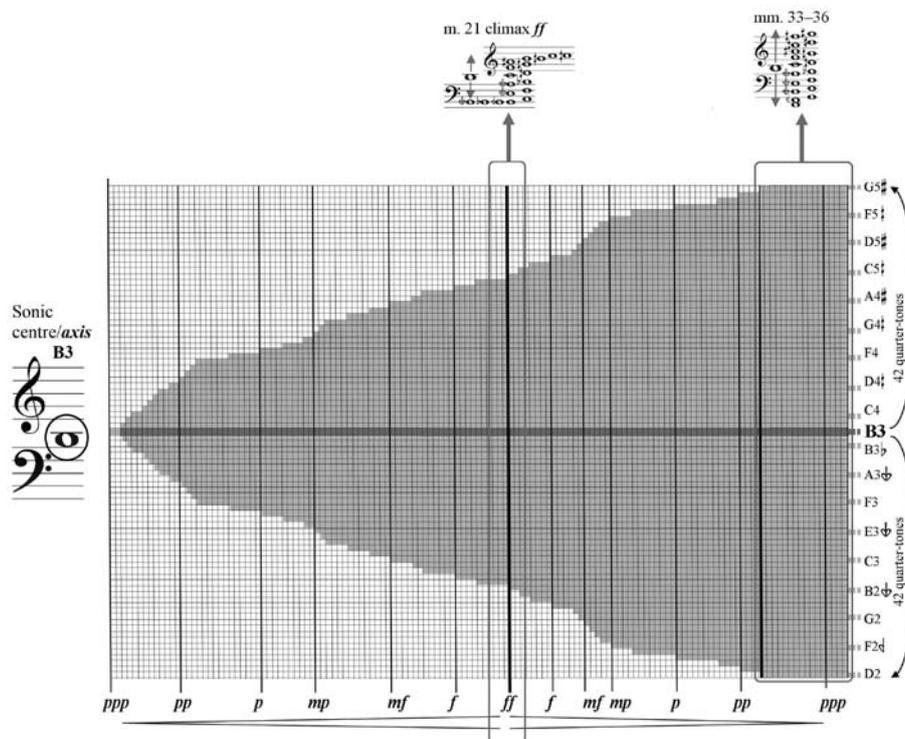


Figure 4. Nakas's *Nude* (2004), introduction, mm. 1–36. Graphic representation of scale ascension and descension, creating quarter-tone glissando, from the single tone B3 to the cluster of 19 tones in the range D2–G5# centered on the axis B3.

Justė Janulytė's *Radiance* for choir and electronics (2015)

The complete music composition arising from a certain sonic centre is typical of some Justė Janulytė's works too. She employs a slow transition from one chord to the other, resulting in extremely slowed down motion like zooming into the very depth of sound, its essence. According to Vita Gruodytė, Janulytė's music is somewhat of "a promenade in the space of sound ... as if we were inside the sound trying to catch the shadows of sound" (cited from Gruodytė 2015: 3).

Commenting on the glissando-like approach in Janulytė's music I should note that the composer operates with the ordinary 12-TET scale, and the microtonal sound is only perceptible as the result of glissando yet not fixed or controlled otherwise. Prior to concentrating on Justė's choir piece, *Radiance*, I would provide a comment on her seminal score *Sandglasses* for four cellos, live electronics, video and installation (2010), where the composer systemically applied glissando that is materialized by a polytemporal canon and lasts exactly 50 minutes: the initial unison D5 splits off (see Fig. 5), and four cellos continue to move further from each other and reach the lowest note at different moments. Though the descending tones form a G harmonic minor scale, however, recording the long-lasting tones, and then repeating them slower, the overall sound results in a dense microtonal texture.⁸ In some sense, *Radiance* for mixed choir and live electronics (2015) follows the technique implemented in *Sandglasses*: a gradual expansion of two initial tones with a metaphoric reference to the nuclear explosion (see Fig. 6).⁹ Starting with an octave of tone A (sopranos and altos sing A4, and tenors and basses start singing A3), the groups of voices gradually move up and down musically imitating the process of radiating and splitting (see Fig. 7). Such a process determines the structure of the composition expressed as an overlap of two antiphonal processes of radiation that lasts 30 minutes. Though the score uses regular notation, similar to *Sandglasses*, the subtle and non-simultaneous transitions create the microtonal effect. Therefore Janulytė's composing motto resembles the microtonal approach, just like looking through the telescope focused on the atoms of sound.

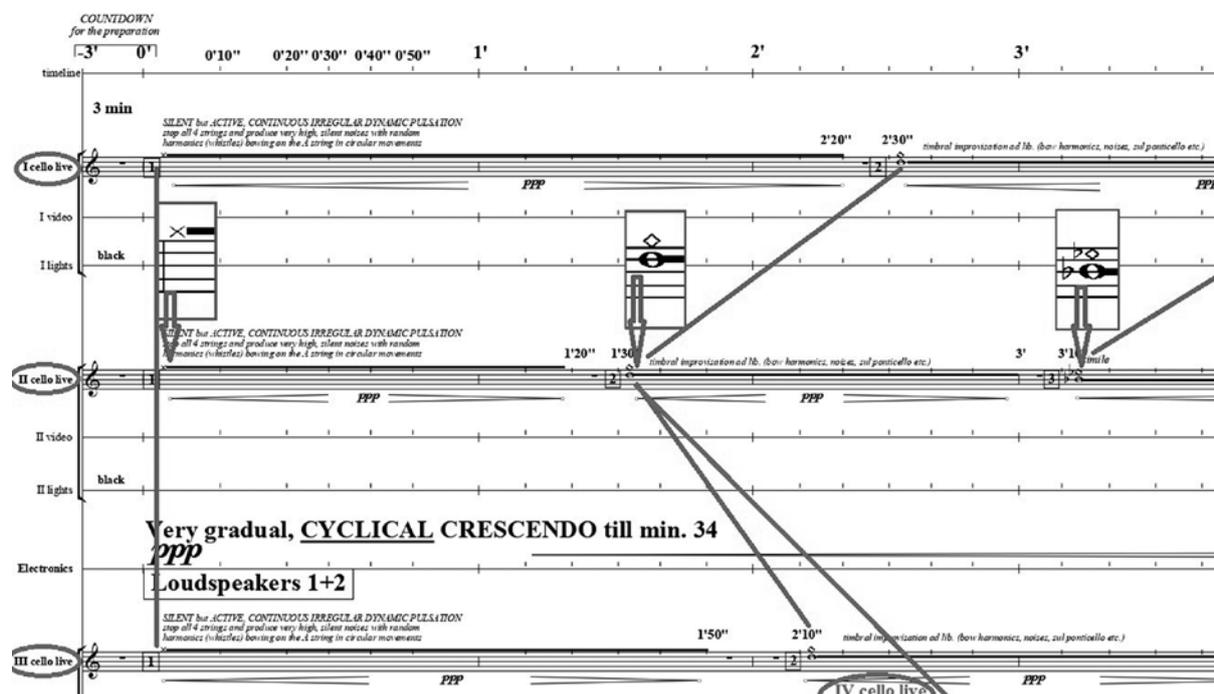


Figure 5. Janulytė's *Sandglasses* (2010), beginning. Non-simultaneous split off from initial tone D5.

⁸ By the way, as in the case of Nakas's *Nude*, Janulytė applies gradually increasing dynamics from *ppp* to *fff* and backwards, arriving at the climax at the 34th minute (an approximate golden section of total duration).

⁹ In the score annotation, Janulytė provides a fragment by Julius R. Oppenheimer, scientific director at the Manhattan Project, from his speech after the first artificial nuclear explosion *Trinity test* near Alamogordo, New Mexico, on July 16, 1945: "If the radiance of a thousand suns were to burst at once in the sky, that would be the splendor of the mighty One. I am Death, the destroyer of worlds." (A quotation from *Bhagavad Gita*, Chapter 11, shloka 12, and Chapter 11, shloka 32.)

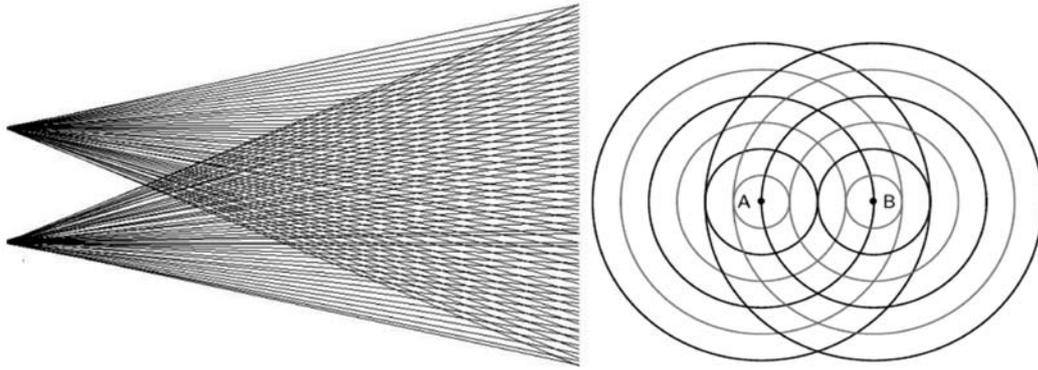


Figure 6. Janulytė's *Radiance* (2015). Image of an explosion as a design for the expansion of unisons and overall structure.¹⁰

gradual CRESCENDO until 4'

-1' 0' 0'30" 1' 1'10" 1'20" 1'30" 1'40" 1'50" 2' 2'10" 2'20" 2'30"

recorded whistles start from almost *mormodando*, slowly opening the mouth within the dynamic crescendo

S.1 AUUIEUOA*)
 S.2 UOAI EAOU*)
 S.3 IOUAEUOI*)

A.1 EOUIAUOE*)
 A.2 OAUIEUAO*)
 A.3 AUOIEOUA*)

T.1 AUUIEUOA*)
 T.2 UOAI EAOU*)
 T.3 IOUAEUOI*)

B.1 EOUIAUOE*)
 B.2 OAUIEUAO*)
 B.3 AUOIEOUA*)

Detailed description: This is a musical score for a piece titled 'Radiance' by Janulytė. The score is for a large ensemble of recorded whistles, organized into sections S.1-S.3, A.1-A.3, T.1-T.3, and B.1-B.3. The music is marked with a 'gradual CRESCENDO until 4'' and starts at -1' and ends at 2'30". The dynamics range from pppp to p. The score includes vocalizations (AUUIEUOA*) and is characterized by a dynamic crescendo and a 'split off' from two initial tones A3 and A4.

Figure 7. Janulytė's *Radiance* (2015), beginning. Split off from two initial tones A3 and A4.

¹⁰ Graphic sketch provided by the composer.

Rytis Mažulis's *Solipse* for cello and electronic tape (2018)

Showing a long-lasting creative application of microtones in his compositions, Mažulis presents a true fascination in possible tone divisions that started in the 1980s and 1990s with spirals of whole-tone scales (e.g. his canon *The Dazzled Eye Has Lost Its Speech* for four voices, 1985) and structures containing superimposed thirds (e.g. computer pieces *Canon aenigmaticus*, 1990–1992, and *Clavier of Pure Reason*, 1992–1994). Later, Mažulis turned to the micro-world and a variety of semitone fractions and started to experiment with one-center generated sound structures (e.g. *Palindrome* for computerized piano, 1996), composing music derived from a single melodic pattern, or even one note.

“Microdimensional” is probably the most suitable concept for Mažulis's style (Daunoravičienė-Žuklytė 2016: 320). The impression of chaos created out of a diligently constructed simple order would describe his music laboratory too. For example, *Ex una voce* (2004) is based on a single melody multiplied into 13 parts that are performed at different tempos and create an impression of disorder.

Having in mind the rich variety of microtonal results in Mažulis's oeuvre,¹¹ in this article I delve into the analysis of one of his recent works, *Solipse* for cello and electronic tape (2018), intended for 32 cellos – one live performer and 31 pre-recorded samples. The piece brightly presents an especially elaborated and sophisticated approach to canon technique and microtonal divisions. The composer applies the so-called microdimensional approach to several parameters of the composition, including tone division and tempo fractions according to strictly calculated rules. Therefore, the overall structure of the composition builds up, let's say, an image of multi-dimensional glissando:

- first, a polytemporal effect is achieved by gradually slowing down the tempo. A map of tempos for live cello part (see fig. 8) indicates the strict slowing down of metronome marking per one second every next note or measure (i.e., the tempo in the first measure equals 60 per quarter; in the second – 59 etc.); thus the first note continues one second while the final note, numbered as 69, lasts sounding for 10 minutes;
- second, starting with tone C6 the melody descends in subtle distances that are recorded in cents. The calculation of the required cent amount for every next tone is based on the summing note number and cent amount of the previous tone. When the summing of cents comes up to 100, the composer starts from 0 again. The overall calculation of the first live-cello part is as follows (see also Fig. 8):

(C6) c – 1st tone is equal to 0 cents, **2nd tone** – 1 cent lower (because 1st tone + 0 cents = 1), **3rd tone** – 3 cents lower than 2nd tone (because 2nd tone + 1 cent = 3), **4th tone** – 6 cents lower than 3rd tone, **5th tone** – 10 cents lower, **6th tone** – 15 cents lower, **7/21**, **8/28**, **9/36**, **10/45**, **11/55**, **12/66**, **13/78**, **14/91**;

b – **15/5**, **16/20**, **17/36**, **18/53**, **19/71**, **20/90**;

b-flat – **21/10**, **22/31**, **23/53**, **24/76**;

a – **25/0**, **26/25**, **27/51**, **28/78**;

g-sharp – **29/6**, **30/35**, **31/65**, **32/96**;

g – **33/28**, **34/61**, **35/95**;

f-sharp – **36/30**, **37/66**;

f – **38/3**, **39/41**, **40/80**;

e – **41/20**, **42/61**;

e-flat – **43/3**, **44/46**, **45/90**;

d – **46/35**, **47/81**;

c-sharp – **48/28**, **49/76**;

c – **50/25**, **51/75**;

b – **52/26**, **53/78**;

b-flat – **54/31**, **55/85**;

a – **56/40**, **57/96**;

¹¹ E.g., in *Sybillia* for mixed choir (1996, commissioned by the contemporary music festival Gaida) Mažulis employed $\frac{3}{4}$ intervals and endless canon moving in a circle that is possible to design geometrically; the subtle piece *ajapajapam* for 12 voices, string quartet and electronics (2002) features the intervals of 3.333 cents moving in a very slow glissando, gradually expanding into six-part texture and canonically descending a minor sixth; the use of quarter-tone series and their inversions as well as mensural proportions (6 : 4 : 3 : 2 : 1 : 2... etc.) is typical of Mažulis's *Canon mensurabilis* for six instruments (2000); *Cum essem parvulus* for eight voices (2001) manipulates by using the microtones of 20 cents and a polytemporal system that creates a palindrome shape; while his *Schizma* for 14 flutes (2014) is a result of polytempos at production of microintervals of different size, dividing the semitone into 24–49 equal parts and applying a similar procedure to the time values.

- g-sharp – 58/53;
- g – 59/11, 60/69;
- f-sharp – 61/28, 62/88;
- f – 63/49;
- e – 64/11, 65/74;
- d-sharp – 66/38;
- d – 67/3, 68/69;
- c-sharp – 69/36.

- third, every next cello enters the same pitch C, but at a different tempo that is a second tempo from the previous cello part (i.e. if the first-live cello is marked in seconds 60, 59, 58, 57, 56, 55, ..., then the second cello/1st pre-recorded sample starts at 59, 58, 57, 56, 55, ...; the third cello at 58, 57, 56, 55, ... and so on; see Fig. 9);
- fourth, despite every next cello entering with a slower tempo, the total duration of the performance is equal to the first live cello (i.e. every next cello part is digitally stretched to the original “size”, so its duration in seconds deviates from the original series in seconds).

I would note that number 69 serves as a structuring measure for the composition. Firstly, in total, Mažulis designed a series of 69 notes, descending from C6 to C4#. Secondly, the composer applied 69 different tempos: the duration of the piece was determined in advance when he chose the starting tempo mark 60. Respectively it was possible to slow down the tempo up to 1 (in total 60 different tempos) plus composer divided value 1 into tenth parts resulting in 9 additional tempos (obtained dividing 1 into 0.9, 0.8, 0.7, 0.6 and so on) – thus getting 69 different tempos.

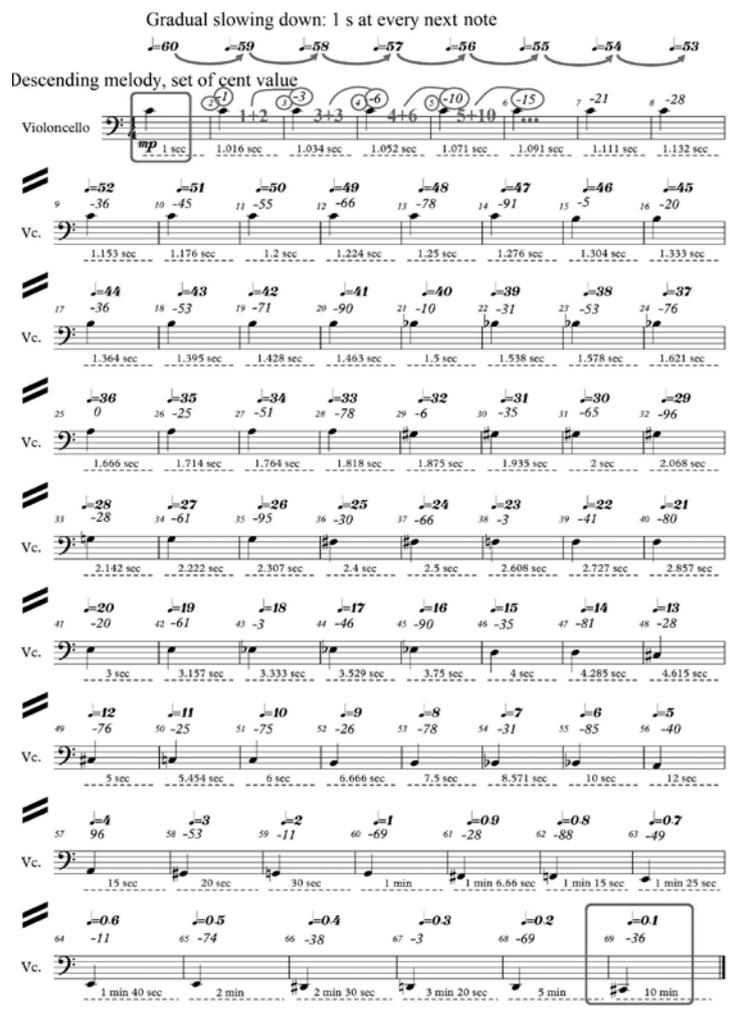


Figure 8. Mažulis's *Solipse* (2018), the map of gradually slowing down tempo designed for a live cello part

Figure 9. Mažulis's *Solipse* (2018). Graphical reduction of the score, 1–16 cellos, mm. 1–4, presenting the overall form of the composition

The *Solipse* score is an example of a strongly technologized process of creation as well as performance. Due to very complicated and strict scores, Mažulis has reduced the personality of a performer to a nearly mechanical state, while the audience also encounters challenges. Also with the help of the computer Mažulis can operate maximally reduced intervals that are hardly perceptible by ear.¹² However, there is no stop sign for Mažulis, whose sound world is immersed deeply into microscopic tone-divisions up to 1 cent. In *Solipse*, in his own words, the composer has achieved the maximal purity of creative mind expression, obtaining a highly hypnotic music process. Moreover, the solid architecture of the score has collected inside the diversity of microtonal manipulations from the adoration of unison and refined transitions to overall glissando forming a microdimensional result.

¹² As Horst-Peter Hesse pointed out, the experiments with specially built psalteries revealed that the $\frac{1}{12}$ -tone is the limit suitable for practical purpose (Hesse 1991: 214). Here I would add a statement by Alois Hába, who had described the $\frac{1}{12}$ -tone = 17 cents as the smallest interval in his *Neue Harmonielehre* (1927).

Conclusions

Based on the analysis of various music scores by Lithuanian authors I would note that the most common cases in Lithuanian music demonstrate the ornamentation or inflection of traditional sounds and chord harmonies, the application of transitional tones and specific treatment of glissando. Only a few Lithuanian composers may be attributed to the systematic type that characterizes the period starting from the 1990s, e.g. the sublimation of canon technique by Mažulis.

Some other authors follow a consistent path in creating rationally constructed compositions while still maintaining the energy of expression. These include Justė Janulytė, who applies the totality of glissando in her works; Vytautas Germanavičius, who recently turned towards the creation of artificial scales with microtones that are derived from Lithuanian folk music and are comparable to harmonic series; or Justina Repečkaitė, who is using microtones as derivatives from spectral scales as a means of manipulation.

References

- Ayers, William Reilly (2018). *Structural Properties and Compositional Processes in Microtonal Equal Temperaments*. PhD thesis. The Graduate School of the University of Cincinnati.
- Daunoravičienė, Gražina (2016). *Lietuvių muzikos modernistinės tapatybės žvalgymas* [Exploration of the Modernistic Identity of Lithuanian Music]. Vilnius: Lietuvos muzikos ir teatro akademija.
- Dosse, François (2010). *Gilles Deleuze and Félix Guattari: Intersecting Lives*, transl. by Deborah Glassman, New York: Columbia University Press.
- Gruodytė, Vita (2015). Esu garsinių fenomenų stebėtoja [I'm an Observer of Sound Phenomena]. In: *Kultūros barai*, 12: 2–11.
- Gruodytė, Vita (2013). Kvėpuojanti Justės Janulytės muzika [Breathing Music by Justė Janulytė]. In: *Kultūros barai*, 9: 36–40.
- Haas, Georg Friedrich (2003). Mikrotonalitäten. In: *Musik-Konzepte Sonderband: Musik der anderen Tradition: Mikrotonale Tonwelten*, ed. Hans Rudolf Zeller, Heinz-Klaus Metzger, and Rainer Riehn. München, Germany: Edition text + kritik: 59–65.
- Hesse, Horst-Peter (1991). Breaking into a New World of Sound: Reflections on the Ekmelic Music of the Austrian Composer Franz Richter Herf (1920–1989). In: *Perspectives of New Music*, 29, 1 (Winter): 212–235.
- Keislar, Douglas (1991). Introduction. In: *Perspectives of New Music*, 29, 1 (Winter): 173–175.
- Keppler, Diana (2001). Der Futurismus oder Die Musik im Zeitalter der Maschine. In: *PopScriptum*, 7: *Musik und Maschine*: 1–15, hrsg. vom Forschungszentrum Populäre Musik er Humboldt-Universität Berlin, <https://www.musikundmedien.hu-berlin.de/de/musikwissenschaft/pop/popscripum-1/musik-und-maschine/7-2014-musik-und-maschine>, access: 28.10.2020.
- Kučinskas, Antanas (2003). Lietuvių šiuolaikinių kompozitorių komponavimo principų tipologijos bruožai [Typological Features of the Composition Principles of Contemporary Lithuanian Composers]. In: *Menotyra*, 1(30): 10–16.
- Mažulis, Rytis (2015). Composing Microtonal Melody. In: *Principles of Music Composing: Phenomenon of Melody*, XV, Vilnius, 159–164.
- Pertout, Andrián (2007). *Three Microtonal Compositions: The Utilization of Tuning Systems in Modern Composition*. PhD thesis. University of Melbourne.
- Read, Gardner (1990). *20th-Century Microtonal Notation*. Westport, CT: Greenwood Press.
- Schoenberg, Arnold (1950). Composition with twelve tones. In: *Style and idea by Arnold Schoenberg*, ed. Dika Newlin, New York: Philosophical Library: 102–143.
- Stanevičiūtė, Rūta (2015). *Modernumo lygtys. Tarptautinė šiuolaikinės muzikos draugija ir muzikinio modernizmo sklaida Lietuvoje*, Vilnius: Vilniaus dailės akademijos leidykla.
- Werntz, Julia (2001). Adding Pitches: Some New Thoughts, Ten Years after Perspectives of New Music's Forum: Microtonality Today. In: *Perspectives of New Music*, 39, 2 (Summer): 159–210.

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Mikrotoninė muzikos kompozicija: nuo dvylikatonio garsaeilio išplėtimo iki mikrodimensinės struktūros

Santrauka

1991 m. Douglasas Keislaris, žurnalo „Perspectives of New Music“ specialaus numerio, skirto mikrotonalumui, redaktorius ir autorius, atkreipė dėmesį, kad netradicinės temperacijos suteikia tarsi naują įkvėpimą minimalizmo raiškai muzikoje. Kita vertus, dar XX a. 7 dešimtmetyje mikrotoninio komponavimo technika sklaidėsi pagreičiui su naujo skambesio ir tembrų paieškomis bei spektrinės muzikos eksperimentais. Mikrotonalumo raišką lietuvių autorių kūryboje paskutiniaisiais XX a. dešimtmečiais galima nusakyti kaip tiesioginę sąsają su pasaulyje plėtojamomis avangardo tendencijomis. Siekiant įvardyti, kuo remdamiesi Lietuvos kompozitoriai pasitelkė mikrotoninius elementus savo partitūrose, galima išskirti dvi pagrindines kryptis – tai ornamentinė / koloristinė maniera, paįvairinusi ir praturtinusi tradicinį tolygaus 12-tonio garsaeilio skambesio lauką, ir sistemiška / struktūruota kūrėjo prieiga.

Straipsnyje analizuojamos trijų lietuvių kompozitorių – Šarūno Nako, Justės Janulytės ir Ryčio Mažulio – kompozicijos, parašytos jau po 2000-ųjų ir reprezentuojančios *glissando* kaip komponavimo technikos, nulemiančios kūrinio struktūrą, atvejus. Šarūno Nako pjesėje simfoniniam orkestrui „Nude“ (2004) pasitelkiama ketvirtatoniais aukštyn ir žemyn generuojamų melodinių slinkčių logika, simetriškai formuojama apie centrinį garsą *b*. Justės Janulytės kompozicijos „Radiance“ chorui ir elektronikai (2015) atspirties tašku pasirinktas garso *a* oktavos intervalas, kuris partitūroje nuosekliai plečiamas taip „įgarsinant“ branduolinio sprogo vaizdinį. Viename naujausių savo darbų, pjesėje „Solipse“ violončelei ir garso įrašui (2018), Rytis Mažulis pasitelkia multidimensinę prieigą, *glissando* efektą pritaikydamas įvairiems parametrams: konstruodamas 32 balsų kanoną (skamba viena violončelė gyvai bei 31 iš anksto įrašytas garso takelis) kompozitorius, pasinaudodamas skaitmenine progresija, mikroskopiniu tikslumu dalija intervalus į smulkias mikrotonines slinktis (pavyzdžiui, atstumas centais 1, 3, 6, 10, 15), atitinkamai nuosekliai yra lėtinamos tempo nuorodos (sulig kiekvienu nauju garsu tempas sulėtėja viena sekunde), kiekviena kita violončelė (iš anksto įrašytas garso takelis) įstoja viena padala / sekunde lėtesniu tempu už prieš tai buvusiąją.