# HORATIU RADULESCU

## COMPLETE SOLO PIANO WORKS, 1968-2007

IAN PACE, PIANO

# HORATIU RADULESCU

**DISC 1**

| | | |
|---|---|---|
| | **Piano Sonata No. 6, *"return to the source of light"*, op. 110 (2007)** | |
| 1: | I. use your own light | 9:21 |
| 2: | II. kalotrope of the Eternal | 7:48 |
| | | |
| 3: | ***Omaggio a Domenico Scarlatti*, op. 2 (1967)** | 6:42 |
| | | |
| | **Piano Sonata No. 1, *Wiege an den Abgründen/Cradle to Abysses*, op. 5 (1968)** | |
| 4: | I. Giusto fluente – Meno mosso – Più mosso – Lento – Tempo primo | 4:54 |
| 5: | II. Allegro – Meno mosso – Tempo I – Poco meno mosso –<br>Tempo I – Poco meno mosso – Tempo I | 3:56 |
| | | |
| | **Piano Sonata No. 2, "*being and non-being create each other*", op. 82 (1991)** | |
| 6: | I. Immanence | 9:12 |
| 7: | II. Byzantine Bells | 4:32 |
| 8: | III. Joy | 3:03 |
| | | |
| | **Piano Sonata No. 4, "*like a well … older than God*", op. 92 (1993)** | |
| 9: | I. Trumpets of the Eternal | 7:36 |
| 10: | II. The Sacred Sound | 4:15 |
| 11: | III. Music…older than music | 1:06 |
| 12: | IV. Abyss | 3:47 |

Total playing time 67:08

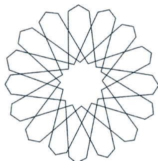
# COMPLETE SOLO PIANO WORKS, 1968-2007

## IAN PACE, PIANO

**DISC 2**

| | | |
|---|---|---|
| | **Piano Sonata No. 5, "*settle your dust, this is the primal identity*", op. 106 (2003)** | |
| 1: | I. The Path Into the Light Seems Dark | 10:46 |
| 2: | II. Darkness within darkness, the gate of all understanding | 3:27 |
| 3: | III. Use your own light and return to the source of light.<br>This is called 'practicing eternity' | 4:15 |
| | | |
| 4: | ***The Origin π III*, op. 100 (1999)** | 6:21 |
| | | |
| | **Piano Sonata No. 3, "*you will endure forever*", op. 86 (1992, rev. 1999)** | |
| 5: | I. If you stay in the center | 6:56 |
| 6: | II. and embrace death with your whole heart | 6:47 |
| 7: | III. Doina | 1:51 |
| 8: | IV. Dance of the Eternal | 4:28 |
| 9: | V. You will endure forever | 7:05 |

Total playing time 52:29



# HORAŢIU RĂDULESCU, The Piano Music

These discs feature the complete acknowledged output for solo piano by Horaţiu Rădulescu (1942-2008).[1] At the heart of this are the six piano sonatas, the first an early work written in Bucharest in 1968, the remaining five are closely linked and collectively known as the *Lao Tzu Sonatas*. They were composed between 1991 and 2007 and each has its own separate subtitle.

My first involvement as a performer of Rădulescu's music was with a concert in London in 2000, where I played the First and Fourth Sonatas. This was followed in January 2003 by an extended recital, also in London, entitled *Modern Mystics*, featuring the then-complete sonatas (nos. 1–4), alongside works of Debussy, Bartók, Skryabin, Francisco Guerrero, James Dillon, and Mark R. Taylor, in the presence of Rădulescu. Then came another concert in the autumn of that year in the same venue (King's College, London) with the UK premiere of the newly-composed Fifth Sonata, alongside the cello and piano sonata *L'exil intérieur* (1997), performed together with cellist Catherine Tunnell, who was then married to the composer. From that date until the end of his life, I worked regularly with the composer, and have regularly performed all the sonatas in various countries, especially the Third, and also gave the world premiere of the Sixth, Rădulescu's last completed work, at the TRANSIT Festival in Leuven, which had commissioned the work. Other pianists who have played some or all of the sonatas regularly include Dana Ciocarlie, James Clapperton, Stephen Clarke, Maria McGarry, Jonathan Powell, Florian Steininger, and Ortwin Stürmer. The Second Sonata in particular, arguably the least technically demanding to play, has had the widest range of interpreters.

Rădulescu was born in Bucharest and studied violin with Enescu pupil Nina Alexandrescu, then composition at the Bucharest Academy of Music with Stefan Niculescu, Tiberiu Olah and Aurel Stroë.[2] With Niculescu in particular he remembers studying works of Gesualdo, Monteverdi, Bach, Schütz, Stravinsky and Webern, as well as music analysis.[3] During this period a shift came about from the dominant neo-classical style towards a greater engagement with European modernism, as a result of a series of new music conferences organized by musicologist George Bălan, who presented and wrote about composers including Edgard Varèse, Iannis Xenakis, Pierre Boulez and Karlheinz Stockhausen. Rădulescu graduated in 1969 and then left Romania for Paris, taking French citizenship in 1974.[4] After this point, like other émigré Romanian composers, his music was barely played at all during the remainder of the communist era.[5]

*Omaggio a Domenico Scarlatti* (1967) is the earliest piece on this album, and dates from when the composer was still a student. It develops from an initial line constituting a 9-pitch row (omitting D♭, F, A, which make up an augmented chord), showing the influence of a flexible dodecaphony also found in the work of Niculescu.[6] This row is fragmented and permuted, with numerous octave displacements. In line with the stark discursive language of post-war modernism, Rădulescu creates an interplay between different figurations acutely characterised by type and texture, but mostly derived from the initial row – series of chords or near chords (sometimes spread or played as repeated notes), multiple lines or a sustained line combined with staccato 'punctuation', and arpeggiated figures encompassing whole regions of the keyboard, as well as varying use of right and

left pedals to distinguish materials, and frequent terraced dynamics. The connection to Scarlatti's keyboard music is in the scale of the piece, roughly commensurate with a Scarlatti Sonata, and the various hand crossings and registral leaps which can also be found (albeit in different forms) in Scarlatti's music.

I have found no earlier source that directly uses the title for Rădulescu's First Sonata, *Wiege an den Abgründen/Cradle to Abysses* (1968), but it almost certainly entails an allusion to Liszt's final symphonic poem *Von der Wiege bis zum Grabe*, S107 (1881). Liszt's title was itself adapted from Mihály Zichy's painting *Du berceau jusqu'au cercueil*, produced in the same year. The first movement of this sonata, which is a student work written when the composer was still living in Bucharest, anticipates the later works in various respects. Cast in ABA form, it is marked by sharply stratified extremes: a line in a claustrophobically constricted tessitura at a *pp* dynamic, violently interrupted by brutal *sfff*s. This line gradually moves away from a relatively regular periodic motion toward a concentration on sustained pitches. This is followed by a comparable passage in the form of a miniature retrograde-canon. Elsewhere, the movement features chords and repeated patterns or pitch cells that articulate harmonies combining extremely compressed intervals with very wide spacings, with relatively little occupying the middle ground. These materials are often projected at a forceful and imposing dynamic. Some of the same characteristics recur in the virtuosic rondo-form second movement, though the writing here is less strikingly individual. Any sense of a 'cradle' is momentary, as the harsh *sforzandi* (Fig. 1), wide-spaced austere chromatic chords, frenetic passagework and obsessive ostinato cellular repetitions evoke a multiplicity of 'abysses'. The image of the 'abyss', which recurs in the title of the finale of the Fourth Sonata, entails sonic phenomena of unstoppable momentum rather than more obvious forms of emptiness.

Fig. 1. Rădulescu, First Sonata, from first movement.

Immediately after the composition of the First Piano Sonata, and following his move from Bucharest to Paris in 1969, Rădulescu's musical idiom changed quite drastically, with his *Credo* for nine cellos,

op. 10. This is derived from the first 45 natural harmonics of a cello's low C2, which Rădulescu uses as the basis for over 4000 micro-music events and what he calls 'rhythm implosions' within the cello timbre.[7] For the next two decades, not least because of a wish to work with instrumental tunings based upon the harmonic spectrum, Rădulescu generally eschewed the piano in some of his most formative and ambitious works, such *as Capricorn's Nostalgic Crickets* for seven identical woodwinds (1972, rev. 1980), *Do Emerge Ultimate Silence* for thirty-four children's voices and thirty-four spectrally-tuned monochords (1974, rev. 1984), the earlier versions of *Outer Time* for twenty-three flutes or forty-two spectrally-tuned Thai gongs (1980 and 1989 respectively), and *Byzantine Prayer* for forty flautists playing seventy-two flutes (1988). However, he did make use of a modified instrument which he called a 'sound icon', laying a piano on its side so that the (now spectrally-tuned) strings can be bowed by the player. Rădulescu first employed this instrument in *I H I 19 ['ai hai nain 'ti:n] – Requiem pour l'Azur* (1972) within an ensemble also including a harpsichord, string quartet, and thirteen flutes, together with dancers and reciters, then foregrounded it in *A Doini* (1974), which required seventeen different players on sound icons. At some point in the late 1970s, he also began, though eventually abandoned, a massive work for one pianist playing three spectrally-tuned grand pianos, *Ethereal thro*, though he did manage to complete a version of *Outer Time* for two such instruments in 1990. However, Rădulescu returned to a tempered scale in the organ work *Christe Eleison* (1986), which Bob Gilmore plausibly argues anticipates the musical language of the succeeding piano sonatas, piano concerto, and sonata for cello and piano.[8]

In 1975, Rădulescu published his 'manifesto' *Sound Plasma: Music of the Future Sign or My D High opus 19∞*.[9] This short, idiosyncratic and deliberately non-linear text interweaves theoretical formulation with what the composer called 'stardust poetry'. Its language can be extravagant, but it remains an important document for understanding his musical imagination. Rădulescu claimed a kind of pre-history for his own work, distinguishing it from music which, as he put it, treats sound 'from its outside', by combining sounds into monody, homophony, polyphony or heterophony. Against this, he aligned himself with figures and traditions which he believed had begun to enter sound more deeply: Gesualdo, Monteverdi, Webern, Ligeti, Stockhausen, North Indian classical music, electronic music, and various "modulated exotic instruments".

The central aim, expressed in one of the manifesto's most characteristic formulations, was to 'Enter the sound, play there and from there', a tendency which Rădulescu claimed could 'transform UTOPIA into REALITY and vice versa'.[10] His point was not simply that timbre should be more important than pitch, but that pitch, duration, dynamics and timbre should all be understood as aspects of a larger sound-organism. He calls the full pitch spectrum, from 16 to 20,000 Hz, the 'REGISTER OCEAN'; within this, sounds are not isolated events but obey laws of 'evo-involution' (a term presumably taken from the opposition of 'evolution' and 'involution' in theosophy),[11] as parts of a plasma, governed by processes of movement, density, resonance and transformation.

A key distinction in the manifesto is between micro- and macro-levels of sound. Rădulescu describes a 'micropulse' acting on the overtones of a 'narrow frequency band' or NFB. This produces different degrees of 'clearness': a sound may be more or less periodic, regular, opaque, serene, harmonically

defined or noise-like. The narrow frequency band, together with the micropulse, creates what he calls a 'sound microplasma'. At the larger level, a 'macropulse' operates on a range of such microplasmas, producing density, quantity, time, and movement between wide, dense, agglomerated atmospheres and narrow, rarefied bands of sound. In this sense, a 'sound macroplasma' is not simply a large chord or texture, but a larger field made from interacting smaller fields. Hence Rădulescu's portentous claim that 'all the historical development of music prepared the qualitative jump to the future multi-directional EVO-INVOLUTION of MICRO & MACRO SOUND PLASMA'.[12]

One does not need to accept the mystical aspects of Rădulescu's thought in order to hear their musical consequences.[13] The essential idea is that music should not be understood primarily as a succession of notes, themes or harmonies, but as the shaping of resonant sound-bodies. These principles undoubtedly inform the majority of his earlier output.[14] A pitch matters not only because of its name, but because of its register, its possible relation to a fundamental, its place within a spectrum, and its contribution to a field of colour, density and vibration. This helps explain why the equal-tempered piano could later become usable for Rădulescu again: not as a microtonal instrument, but as a means of suggesting spectral relations: fundamentals, false fundamentals, partials, resonant extensions, and registral fields.

The manifesto also anticipates Rădulescu's later treatment of chant and folk material. He defines a taxonomy of sound sources: instruments/objects (I/O); human sources (all abstract sounds produced by the human body) (H); sounds of nature (N); electronic sources (E); and 'concrete' sound sources which produce language and articulation (L).[15] In one especially prescient passage, he suggests that 'excerpts of folklore' might be treated as 'long single sound events with increased sound spectrum'.[16] This is very close to what happens in the piano sonatas from the Third onwards. Byzantine chants and Romanian folk melodies are not simply quoted, arranged or harmonised; through repetition, mensuration canon, superimposition and registral expansion, they become microplasmas in their own right.

The *Lao Tzu Sonatas* can be viewed as a type of cycle or at least collection of interrelated pieces, in which chant-like or folk-derived materials are continually juxtaposed with more abstract spectral harmonies, derived in part from Rădulescu's earlier idiom. The chant and folk materials retain traces of song, ritual and dance, but they are also transformed into something larger: continuous bodies of resonance, rhythm and colour. The spectral passages and the borrowed melodic materials are not simply opposed as modern versus ancient, or abstract versus folk-like. Both become part of Rădulescu's wider attempt to create music from within sound itself: a music of microplasmas and macroplasmas, of stark resonances, layered sources, and slowly or violently changing fields of energy.

Rădulescu researched folklore at the Institute of Ethnology of the Romanian Academy of Sciences before leaving the country,[17] yet only by the time of the Second Sonata did he make this interest musically explicit. Such explicit allusions to Romanian folklore inevitably carry national-cultural implications.[18] Furthermore, they locate Rădulescu's work in a wider twentieth-century tradition

of composers including George Enescu, Leoš Jánaček, Zoltán Kodály and of course Béla Bartók, though it is noteworthy how Rădulescu's range of borrowings (all Byzantine or Romanian) are much narrower than the pan-national range of musics collected and set by the other figures.

The harmonic language of this music is highly distinct. Rădulescu makes frequent use of harmonic fields derived from series of alternating minor thirds (or sometimes another interval used regularly) and perfect fifths, a technique Rădulescu had employed in a few earlier works such as the organ work *Christe Eleison* or *Byzantine Prayer*, which he said produced 'Brancusi infinite columns'.[19]

Furthermore, Bob Gilmore has shown, in his analysis of the Second Sonata (itself drawing extensively upon the composer's own conception),[20] how individual pitches are used less for their conventional harmonic function than as parts of larger resonant fields, because of their relationship to harmonic partials (albeit approximations because of the use of an equal-tempered instrument) of an underlying fundamental pitch. Some of these fundamentals are actually heard; others are implied, or lie beyond the range of the piano. This means that register becomes crucial: the same pitch in a different octave may have a different harmonic function. Rădulescu often made use of the 'sum' and 'difference' of two partials (literally adding or subtracting the frequencies) within a chord or general sonority; when such a chord or sonority would include one or both of such derivatives, he would describe the situation as 'healthy'.

Notes might be transposed upwards by one or more octaves, as they would then form new partials, but not downwards, as they may then lie outside of the spectrum of the fundamental. These strategies are used to create 'spectral signatures' which recur in different pieces or throughout a piece. Elsewhere Rădulescu chooses more freely from the spectrum (what he called 'preferential filtering') in line with more intuitive requirements for register and texture, relating to the use to which the sonorities will be put. Furthermore, there can be a group of pitches called a 'pseudo-spectral modus', which could result from more than one possible fundamental, and another concept of a 'false fundamental', a low pitch which adds colour to a harmony, often close to the actual fundamental, for which an informal consideration of its register and intervallic relationship to other pitches suggests such a function, though the other pitches do not consistently fall within its spectrum.

At the same time, these spectral procedures should not be understood too mechanically. Rădulescu often chose pitches freely and intuitively, filtering the harmonic spectrum according to the register, texture and expressive character he wanted. Some sonorities have a special status, including the so-called 'Origin-chord' which reappears in more than one movement. Such terms matter less as technical labels than as signs of the composer's attempt to create a highly personal harmonic world: one in which acoustics, intuition, ritual association and pianistic resonance all interact.

The Second Sonata, *"being and non-being create each other"* (1991), composed a whole 23 years after the first, is viewed by Antonio Lai as ushering in Rădulescu's 'second period'.[21] Certainly its occasional use of modal and folk material on an equally-tempered instrument differentiates it strongly from the composer's earlier slowly morphing, athematic, microtonally-detailed works, often for large numbers

of the same instrument. Rădulescu had returned to the use of a tempered scale in the organ work *Christe Eleison*, which Gilmore has plausibly argued anticipates the musical language of the sonatas,[22] the piano concerto *The Quest* (1996), and cello and piano sonata *L'exil intérieur* (1997).

The subtitles for all of the *Lao Tzu Sonatas* come from the sixth century classic Chinese text, traditionally attributed to Lao Tzu, the *Tao Te Ching*, in the translation by Stephen Mitchell, specifically from chapters 2, 33, 4, 56 and 52 respectively.[23] The full text of the passage from Chapter 2 which supplies the title for the Second Sonata is as follows:

When people see some things as beautiful.
other things become ugly.
When people see some things as good.
other things become bad.
Being and non-being create each other.
Difficult and easy support each other.
Long and short define each other.
High and low depend on each other.
Before and after follow each other.

Therefore the Master
acts without doing anything
and teaches without saying anything.
Things arise and she lets them come:
things disappear and she lets them go.
She has but doesn't possess,
acts but doesn't expect.
When her work is done, she forgets it.
That is why it lasts forever.

The three movement titles, 'Immanence', 'Byzantine Bells' and 'Joy' appear to be purely poetic rather than drawing upon specific sources.

In the Second Sonata, Rădulescu does not yet quote or borrow directly from folk or Byzantine sources, as he would in the subsequent sonatas. Nonetheless, these interests emerge clearly in this work for the first time within his piano music. Its most prominent folk-like material is an invented melody, a three-note stepwise descending figure followed by alternating descending major thirds, with a raised Lydian fourth and in a 7/8 metre, whose rhythm, contour and modal colouring suggest affinities with Romanian traditional music, and the archetypes derived from such a tradition as mediated by Bartók's folk-song collections. This theme alternates with a free quasi-inversion of it. The combination of the close tessitura and regular rhythm contrasts strongly with the widely spaced and relatively static material elsewhere in the movement, though over the course of the movement Rădulescu starts to combine characteristics of both material types.

The work is also shaped by further developments in Rădulescu's spectral aesthetic. Here he uses chords which would be described as 'healthy' in the sense defined above. For example, the second chord in the opening bar of the Second Sonata contains a fundamental of $B\flat_0$, then its $10^{th}$ and approximate $11^{th}$ partials in the form of $D_4$ and $E_4$, as well as the $21^{st}$, $E\flat_5$, which is the sum of the previous two (the fundamental is the difference in this case) (Fig. 2).

Fig. 2. Rădulescu, Second Sonata, opening. © Lucero Press, 2020.

The first movement is in a type of modified sonata form (I present here a modified version of the formal outline given by Gilmore),[24] with contrasting subject groups, a long developmental span, and a recapitulation in which the expected order of first and second subject groups is reversed. But the form is less important as a classical template than as a way of managing the work's competing materials: spectral sonorities, invented folk material, rhythmic figures, and resonant bridges between them. Because the material is so diverse, performers can make the movement cohere through steadiness of tempo, sharply defined rhythm, and a clear sense of continuity across contrasting episodes.

The second movement is the most straightforward, consisting of a simple form of melodic elaboration around a range of indicated 'central sounds': of $D_{3}$-$F\#_{4}$-$E_{4}$-$C_{4}$ –$F_{4}$ -$D_{4}$. The title clearly implies a somewhat detached, bell-like tone, whilst the music also requires great sensitivity to colour, weight and decay of each pitch, as well as the relation of each to 'central sounds' within long resonances. The final movement is more rhythmically unified by a consistent 2 + 2 + 2 / 3 + 3 + 3 grouping, which binds together disparate materials.

The Third Sonata, *"you will endure forever"* (1992, rev. 1999), is the longest and grandest of the six, and the first of Rădulescu's piano works to draw explicitly upon pre-existing musical materials, specifically Byzantine chant and, in the third movement, a Romanian *tilinca* melody collected by Bartók from the playing of Josif Ilies. The full text of the passage from Chapter 33 of the *Tao Te Ching*, which supplies the title, is as follows:

Knowing others is intelligence:
knowing yourself is true wisdom.
Mastering others is strength:
mastering yourself is true power.
If you realise that you have enough,
you are truly rich.
If you stay in the centre
and embrace death with your whole heart
you will endure forever.

The first, second and fifth movements thus all take their titles directly from this. The title of the third, *Doina*, refers to a Romanian melodic style; that of the fourth 'Dance of the Eternal' appears to be purely poetic.

The choice of Byzantine sources is unsurprising; quite apart from Rădulescu's wish to espouse an 'outside-time' quality of his work through allusions to music from many centuries earlier (named explicitly in the score), there was a long tradition of interest in and engagement with Byzantine chant in Romania. Composers of art music had drawn upon this tradition ever since Dumitru Georgescu-Kiriac (1866-1928) used it in his *Liturghia psaltică* (undated). The composer Paul Constantinescu (1909-1963) made a major study of Romanian sacred music, and drew upon this research for archaic modal material, which he worked into his compositions, as did many others including Sabin Drăgoi (1894-1968), Doru Popovici (b. 1932) and later one of Rădulescu's teachers, Ştefan Niculescu (1927-2008).[25] Byzantine practices and chants had been preserved in the Romanian orthodox church following the fall of the Byzantine Empire in 1453, and the tradition was studied at length by the composer Anton Pann (1796-1854), who published a theoretical treatise on the work,[26] while in the twentieth-century Ioan D. Petrescu, Gheorghe Cobanu, Grigore Panţîru and others produced other important collections and theoretical works.[27]

Following Soviet occupation and the imposition of a pro-communist government in 1945, and especially after the full communist takeover of 1947–48, there were drastic reforms to education and religion, leaving few Orthodox theological seminaries to teach the old monodic chant traditions, a situation exacerbated by mass closure of monasteries in 1958. Nonetheless, some musicologists were able to continue secular study of Byzantine and other chants, presenting these as national, rather than religious and ecclesiastical, musics. Such re-packaging enabled such chant to be configured as a 'people's music' in line with the doctrines of socialist realism. After the relaxation of socialist realism in the late 1950s, Byzantine music was studied and celebrated further (again divorced from religion), and the achievements of Petrescu and earlier legacy of Pann were celebrated. This process intensified in the mid-1960s in conjunction with Romanian policies of national specificity and increasing orientation towards the West, while musicologists were encouraged to publish in other languages to enhance their international profile.[28]

As Rădulescu grew up and came of age in this world and cultural/political milieu, the musical provenance he selected was thoroughly characteristic for a composer of his time and place. Byzantine chant, at least the notated renditions of which he would have been aware,[29] entailed regular pulsation, many repeated pitches, much stepwise or small interval motion and little in the way of ornamentation. It was straightforward for Rădulescu to integrate this material into the rhythmically incisive idiom he had begun to develop with the Second Sonata.

Rădulescu made use of two Byzantine chants in this sonata (or at least claimed to). The first is a hymn from the thirteenth century, from a 1932 collection by Fr. J.-D. Petresco (Fig. 3),[30] in a Lydian mode on F. The second, all the pitches of which lie within a Lydian pentachord of B♭-C-D-E-F, though centred on C, was claimed by the composer to come from the ninth century, but searches for its source

(including amongst Rădulescu's archives) have so far proved unsuccessful.[31] The earliest melodic notation dates from the tenth century, so this would have to have been written down at least a century later.[32]

Fig. 3. Chant from Le Père J.-D. Petresco, *Les Idiomèles et le Canon de L'Office de Noel*, transcriptions pp. 38-39.

Some Romanian musicologists working during the communist era, including Gheorghe Ciobanu, also explored the influence of Byzantine chant upon Romanian folk and other musical traditions.[33] The sonata uses just one actual folk tune, the shepherd's melody *Horá lungă – Doina* collected by Bartók in 1913 from the playing of Josif Ilies, on a *tilinca* (flute without holes), thus only able to play natural harmonics.[34] It is not difficult to see the appeal of this for Rădulescu or any other spectral composer.[35]

The opening of the first movement of the Third Sonata, like that of the Second, can be understood in terms of pitches which relate to the harmonic spectrum: if the fundamental is viewed as $D_0$, then the $C_3$ is the 7th partial, the $A_3$ the 12th, the central $D_4$ the 16th, the $A_5$ the 48th, the $C\#_6$ the 60th (thus the sum of the 12th and 48th) and so on (Fig. 4). The $G\#_3$ together with the $A_3$ in bar 2 can be viewed as a means for approximating the 11th partial, though this is very rough, as a combination of $G_3$ and $G\#_3$ would be closer (as Rădulescu does in the third movement of this piece, always using an $F_5$/$F\#_5$ dyad to render Bartók's F¼#$_5$).

Fig. 4. Rădulescu, Third Sonata, opening. © Lucero Press, 2020.

A similar function, more pronounced because it occupies both hands and thus both registers, is created by the reiterated clash between $B\flat_3$ and $B_4$ in bar 5, which recurs in several subsequent bars. All of this resembles the approach to pitch outlined in *Sound Plasma*, and serves to heighten the contrast when the Byzantine melodies enter. Nonetheless, the opening section is not merely a demonstration of spectral theory. What matters dramatically is the way Rădulescu uses varying degrees of consonance and dissonance to create tension and release.

As the movement unfolds, Rădulescu increasingly complicates this spectral foundation. Some pitches fit the implied harmonic frame clearly, while others appear more like intrusions or 'stray' notes, heightening the level of dissonance. These tensions are not immediately resolved; instead, they are prolonged across larger spans, with central intervals shifted, repeated, displaced, and reweighted. The music therefore creates an ongoing drama between spectral stability and harmonic disturbance. Later on, apparent resolutions arrive, including moments where bare fifths suggest a return to greater clarity, even something like a recapitulation. But these are often deceptive: the harmony soon begins to move again. The movement's form is thus shaped less by traditional thematic development than by the continual destabilisation and reorientation of sonority.

The Third Sonata is also the first in which Rădulescu made use of mensuration canons, which are found occasionally in works of Johannes Ciconia, Johannes Ockeghem, Josquin des Prez, Pierre de la Rue and others, in which different parts present the same material at different speeds (see for example Fig. 5).[36]



Fig. 5. Josquin Deprez, mensuration canon from 'Agnus Dei' from *Missa l'homme armé super voces musicales*.

In the first movement, Rădulescu derives a simple two-part mensuration canon at the unison, based on the Petresco melody shown above, with a 2:1 ratio between parts (Fig. 6). He uses the same combined figuration in a transposed form later, in combination with another canon on other material.

Diffracted canon based on a Byzantine Hymn from the XIIIth century

subito
pp espressivo

1/2 Ped. throughout

Fig. 6. Rădulescu, Third Sonata, bars 41-9. © Lucero Press, 2020.

The first movement, like that of all of this group of sonatas, is in a type of modified sonata form. The opening ‘spectral’ material and then the Byzantine canon form first and second subject groups, followed by a short coda on a single D. The long development section employs the opening material, oscillating in pitch but returning continuously to $D_4$/$A_3$. A type of recapitulation appears with the second subject group in the form of a double Byzantine canon (using the thirteenth- and ninth-century materials, the latter in the right hand with prominent grace notes on the same pitch as the note they precede). Only afterwards does the first subject group return, and even then in highly truncated form.

A coda begins very soon afterwards, with sudden slower material, the first time the quaver motion has been relaxed. This features a short new canon on the ninth century Byzantine material, then a return to the slower material, all configured to produce a tonal centre of B♭. Then the first subject group returns, wavering chromatically around $D_4$/$A_3$, followed by a dialogue between a quicker form of the ninth century material and the drone material around $D_4$/$A_3$, then the first Byzantine canon material combined with a drone on $D_4$ alone, a return to the double Byzantine canon, here centred around $A_4$, then reiterated drones in the final three bars.

The ceremonious and funereal second movement reiterates a single harsh, glaring chord – a characteristic assemblage of minor thirds and perfect fifths with an added dissonance - over the knell of a reiterated low $E\flat_1$, which has the appearance of a fundamental, but is really a ‘false fundamental’. (Fig. 7).

Fig. 7. Rădulescu, Third Sonata, second movement, opening. © Lucero Press, 2020.

Fig. 8. Rădulescu, Third Sonata, second movement, bars 30-32. © Lucero Press, 2020.

When the harmony changes, this low pitch serves as a ‘real’ fundamental, and this new chord (Fig. 8) is arguably the most stable harmony of the whole movement (other than in the coda).

When the opening chord returns later, it can be heard either as a structural return or as a worn-out remnant of what came before. The movement as a whole thus features, in place of conventional development, the repeated summoning, alteration and erosion of a few grave, resonant sounds.

The melody of the third movement, ‘Doina’, is entirely constructed from natural harmonics, as mentioned earlier. Rădulescu also uses simultaneously-struck pairs of high, near-pan-diatonic chords, first played *ppp* against a background of the resonance provided by the exuberant melody. The pedal is held down throughout the movement, so these chords add a slight timbral shift within a resonance which remains dominant and relatively untouched (Fig. 9).

Fig. 9. Rădulescu, Third Sonata, third movement, opening. © Lucero Press, 2020.

The drama is created when the high chords become much louder and shrill, as well as sometimes more chromatic, and with a few 'solo' single pitches interspersed within the same register. Nonetheless, the registral configuration prevents these (even the single pitches) from interfering with the basic harmony, so they assume more of a gestural quality. The whole movement can be viewed as a type of progressive disjunction between different microplasmas.

The fourth movement, 'Dance of the Eternal', is entirely built on an ostinato of three pulses lasting 4, 2, and then 3 semiquavers, and is dominated by the 'Brancusi infinite columns', built entirely on an unfolding harmony of $C\#_3$-$E_3$-$B_3$-$D_4$-$A_4$-$C_5$-$G_5$-$B\flat_5$-$F_6$-$A\flat_6$, thus alternating minor thirds and perfect fifths (Fig. 10).

Fig. 10. Rădulescu, Third Sonata, fourth movement, opening. © Lucero Press, 2020.

This continues until the final ten bars, when this is replaced by an alternation of major seconds and perfect fifths, $B_2$-$C\#_3$-$G\#_3$-$A\#_3$-$F_4$-$G_4$-$D_5$-$E_5$. Otherwise, the major contrasts in the movement are those of dynamics and pedalling, as well as increasing additions of grace notes around the basic pattern.

The last movement is utterly dominated by rhythmic lines on $C_2$, often in short mensuration canon formations. This pitch serves as the $1^{st}$ partial, to which is added the equally relentless $F_5$ as a very approximate $11^{th}$, the partial which deviates furthest from its equal-tempered equivalent, by almost exactly a quarter-tone.[37] But the long-range tension between these pitches what drives the music, notwithstanding some interruptions, because of the flatness of the note on the piano relative to the spectrum, so that the first replacement of the $F_5$ by a $G_5$ (the $12^{th}$ partial) in bar 34 (Fig. 11) creates a huge sense of relief.

Fig. 11. Rădulescu, Third Sonata, fifth movement, bars 29-34. © Lucero Press, 2020.

Also key to this movement are three figurations with distinctive harmonic properties. The first was understood by Rădulescu as a type of 'cosmic Skryabin', and consists of a modified partial octatonic set (A-A#-C-C#-D-F# - the D as the 'stray' pitch) as is characteristic of Skryabin's music, whilst the angular configuration can be found in many of the Russian composer's later piano works. The subsequent figurations Rădulescu associated with Musorgsky and Stravinsky respectively.[38] These are even looser: the Musorgsky connection appears to amount to the combination of two harmonies both containing a fifth, but not in characteristic tritonal relationships as in Musorgsky's work. The Stravinsky connection may be a vague allusion to the 'Danse sacrale' from *Le sacre du printemps*, with a more closely-packed chord placed at some intervallic distance from a lower pitch (in Stravinsky) or group of pitches, with stronger dissonant pitch relationships. The successive use of downwards octave transpositions moves the harmony progressively further away from a harmonic spectrum.[39] Fig. 12 shows when each of these appears towards the end of the movement.

Fig. 12. Rădulescu, Third Sonata, fifth movement, bars 109-113. Figurations associated by composer with Musorgsky, Stravinsky and Skryabin respectively. © Lucero Press, 2020.

The other material setting the incessant $C_2/F_5$ repetitions into relief is a twelve-note complex[40] (in the manner found in the work of Arthur Lourié, Nikolay Roslavets and Nikolas Obouhow),[41] spread over a tessitura of over three octaves in the treble register, and with much more spacious though varied rhythms. This appears just three times, but is made up from groups of spectral pitches with fundamentals a semitone apart.

The first appearance of all three of the 'Skryabin', 'Musorgsky' and 'Stravinsky' figurations in succession heralds a subsequent ecstatic intensification of the harmony, as the $F_5$s are combined with $A_5$s and $B_5$s. This is developed, then after another short interlude (with the second appearance of the twelve-note complex), pushed further through the superimposition of the 'resolution' $G_5$. Rădulescu isolates the G, now a solitary vector pointed in the direction of some imaginary infinity, but then uses the Musorgsky/Stravinsky/Skryabin materials (in that order) to precede an unexpected harmonic shift in the last bars, with the $F_5/A_5/B_5$ trichord, and the solo $G_5$, expanded at both ends by a high $C\#_6$ and lower $F\#_4$, the latter of which, at an interval of a diminished octave from its nearest neighbour, jars strongly with what would otherwise be a whole-tone cluster 'emancipated' from the $C_2$ which has dominated the rest of the movement.

In a section of *Sound Plasma* entitled 'Conceal Cause & Effect', one passage is especially prescient of the composer's later development:

Generally, we start with the manipulation of N and L source because of their normally discontinuous sound objects. Excerpts of folklore, for example, could be prepared and treated as long single sound events with increased sound spectrum and recorded in a very continuous trajectory similar to that of an already established NFB;[42]

This is ultimately what Rădulescu achieved in his piano works from the Third Sonata onwards: the transformation of musical material clearly differentiated from the rest of his music – chant and folklore, associated by the composer with nature and language rather than instruments or other human sounds – into 'microplasmas' through the use of canonical techniques and superimpositions.

The full text of the passage from the *Tao Te Ching,* Chapter 4 which supplies the title for the Fourth Sonata, *“like a well … older than God”* (1993), is as follows:

The Tao is like a well:
used but never used up.
It is like the eternal void:
filled with infinite possibilities.
It is hidden but always present.
I don’t know who gave birth to it.
It is older than God.

The title of the first movement, ‘trumpets of the eternal’, appears to be a reference to the writings of thirteenth-century Archbishop of Genoa and Italian chronicler of the lives of the saints, Jacobus da Varagine:

The Lesser Litany is called the Procession, because on this occasion the Church holds a great procession at which the cross is borne aloft, the bells are rung, the standard is carried. In some churches men carry a dragon with a huge tail. All the saints are besought one by one for their protection. In this procession we carry the cross and ring the bells to make the devils flee in terror; for just as a king in the midst of his army has the royal insignias, namely, trumpets and standards or banners, so Christ the eternal King in the midst of his Church militant has bells for trumpets and crosses for standards. Any tyrant would be terrified if he heard in his land the trumpets and saw the banners of some powerful king, his enemy; and so the demons who are in that murky air are sore afraid when they hear Christ’s trumpets—the bells—and catch sight of his standards— the crosses. It is said that this was the reason for ringing the church bells when storms were brewing, namely, that the demons who stir up the storms should hear the trumpets of the eternal King and flee aghast, letting the storms die down.[43]

The title of the second movement, ‘the sacred sound’, is a common description of the symbol ‘Om’ found in multiple Indian religions. The phrase ‘older than music’ used in the title of the third has frequently been used to indicate primal rhythms, bird song and the like; Rădulescu’s ‘music…older than music’ fashions his own work as evoking some type of ancestral world. The title of the last movement, ‘abyss’, would appear to be another rendition of the ‘eternal void’ from the verse above.

In this sonata Rădulescu makes prominent use of three different Romanian Christmas carols, all of which were originally collected by Bartók and set by him in his *Román kolinda-dallamok (Romanian Christmas Songs) for piano (1915). These are Felsőoroszi*, from Mureş Turda,[44] in the first movement, and *Gyalán*, from Bihar,[45] and *Malomvíz, from Hunyad,*[46] *in the third.*

Imogen Arauco has traced Bartók’s modifications of Romanian carols, from his original transcriptions, through notebook entries and versions included as prefaces to scores, through to his works based upon these melodies, observing a pattern of removal of incidental tones and ornaments,

repositioning of barlines, and alteration of notes and rhythms, all principally in order to clarify the melodies. This meant that the preface versions had already been significantly altered before appearing in that form.[47] In general, Rădulescu uses the simplest forms collected by Bartók, and presents them in a manner so that they are relatively simple, clear and easily identifiable.

The opening of the Fourth Sonata features two higher tetrachords, $E_4$-$G_4$-$A\flat_4$-$B\flat_4$ and $C_5$-$D\flat_5$-$E\flat_5$-$F\#_5$, which are partials of $C_1$ as the fundamental. The lower tetrachord – $F_2$-$A_3$-$B_3$-$D_4$ – contains partials of $D\flat_0$ (Fig. 13).[48]

Fig. 13. Rădulescu, Fourth Sonata, opening. © Lucero Press, 2020.

These are followed by a recurrent motif consisting of a dramatic ascending arpeggio, a variant of one of Rădulescu's 'Brancusi infinite columns', alternating perfect fourths and minor sixths. Then another spectral ground chord is ornamented by simultaneous diatonic and pentatonic descending and ascending figures.

The mensuration canons in this sonata are more extravagant than those in the Third. Using the Romanian melody *Felsőoroszi* (Fig. 14a), Rădulescu creates first a two-part canon, with a 3:1 metrical ratio between the parts, then adds an extra part, to create a 3:2:1 metrical ratio (Fig. 14b). Later he creates a four-part canon, now with a 9:6:3:2 metrical ratio between the parts.

Fig. 14a. Melody of Romanian Christmas Carol, *Felsőoroszi*, as printed in introduction to Bartók, *Román kolinda-dallamok (Romanian Christmas Songs) (1915).*

Fig. 14b. Rădulescu, Fourth Sonata, mensuration canons, bars 27-37. © Lucero Press, 2020.

The first movement, 'trumpets of the eternal' is again sonata-like, but its exposition is more kaleidoscopic than that of the Third Sonata. The first subject group is quadripartite: a theme A, the opening complex of three tetrachords, which collectively form a full twelve-note complex; the dramatic ascending arpeggio as theme B; truncated A material; a theme C, with chords centred on E♭ overlaid with pentatonic and diatonic lines; then theme D, a new chord formation built from minor thirds and perfect fifths with additional notes. The second subject group consists of the three-part mensural canon based on *Felsőoroszi*, oscillating between B♭ and G tonal centres (using a six-note mode, G-A-B♭-C-D-F) over a $E_3$ bass drone as false fundamental; a return to the theme A material at the original pitch; then a short four-part canon, again using *Felsőoroszi* over drone $E_3$. The opening and various subsequent material use permutations of the *aksak* metric pulse,[49] a combination of units of unequal length, especially 2 and 3 – here a mixture of 2+2+3+2, 3+2+2+2, and 2+2+2+3.

The development section involves an interplay between modified forms of themes A, B, C and D with changing tonal centres. A recapitulation can be understood as occurring with a further three-part mensuration canon around *Felsőoroszi*, followed by another four-part canon. Then follows a second development section, first using the theme B material, stridently, first down a minor third, then at the original pitch, to provide 'harmonic punctuation' for a subsequent section. Then *Felsőoroszi* is punctuated by an arpeggio derived from theme B, followed by a further interplay between forms of themes A, B, C and D, and a further punctuated *Felsőoroszi*, interrupted by a version of theme D. A coda consists of various dynamic modifications and transpositions of theme B, then a final combination of different materials in the first subject group, with an indeterminate tonality.

The second movement, 'the sacred sound', is entirely based upon partials of $B_3$, in contrast to the various pseudo-spectral harmonic writing in the first movement, and is one of the composer's only

pieces of late piano writing which resembles his earlier music. The first bar clearly presents a chord of F#$_5$-B$_5$ (3rd and 4th partials) followed by its sum A$_6$ (7th partial) and difference B$_3$ (1st partial). The first chord in bar 2 also contains sums and differences, and various combinations of these inform most of the material in the movement (Fig. 15). The same material is used for the second movement of the piano concerto *The Quest* (1996) and the second movement of the cello sonata *L'exil intérieur* (1997).

Fig. 15. Rădulescu, Fourth Sonata, opening of second movement. © Lucero Press, 2020.

The third movement, 'music...older than music', is straightforward on the surface, consisting of the carol *Gyalán* in a seven-note Mixolydian mode on G with a flattened sixth (G-A-B-C-D-E♭-F-G), in counterpoint with the carol *Malomvíz*, entirely on a three-note F#-G#-A# mode, the two parts in a rhythmic ratio of 3:2 (the right hand slower), all building to a peak dynamic, then the sound left to die away for an equal period of time. Rădulescu himself characterised to me the effect as being like two Thai gongs approaching and then receding from view. But where Bartók's setting of the upper melody (Fig. 16a) is given a quasi-vocal configuration through careful use of accents and articulations (varying between its appearance in the right and left hands),[50] Rădulescu is much starker (Fig. 16b), without such nuances, such as might lend the melody more of a 'human' rather than 'mythical' quality. His is a melody from afar, perhaps sung, but if so, by voices quite distinct from those familiar to modern Western ears. A pure binary between 'shaped' and 'flat' renderings is too simplistic; rather the issue is one of degree. Those accentuations in the left-hand part serve primarily to clarify its polymetric relationship with the other part, rather than entailing another type of expression.

Fig. 16a. Bartók, *Román kolinda-dallamok*, Series II, no. 8.
Fig. 16b. Rădulescu, Fourth Sonata, opening of third movement.

The last movement, 'abyss', is centred around another 'Brancusi infinite column', building upwards in alternating perfect fifths and minor thirds from a 'non-false' fundamental of $A_0$ (though the $B_1$ in the opening chord does not fall in this series), with the pitch configuration (relatively close-packed chords above a much lower pitch) again giving a pseudo-spectral aura. Transpositions but with different relations to the low pitches are used to create a sense of development and variation. Throughout, Rădulescu intersperses pitch material from the first and third movements. Rhythmically, he once again employs permutations of the *aksak* metric pulse. The dominant form used here is 2+2+2+2+3, making the music into a type of infernal and relentless dance, which sweeps up much of the music which has gone before.

Between the Fourth Sonata, the revised version of the Third, and the Fifth, Rădulescu composed *The Origin π* (1999), one of four pieces of that title, the others being *The Origin* for solo percussion (1998), the fourth movement of the cello sonata *L'exil intérieur* (1997), entitled 'The Origin γ' (but which corresponds to the second movement of the Sixth Sonata, see below), and the fourth movement of the piano concerto *The Quest* (1996), also called 'The Origin', and similar to the second movement of the cello sonata. The piano piece is Rădulescu at his most uncompromising, entirely played on a $D_1$ and later a $D_1/A_0$ dyad, together with what he calls 'spectral resonance' created by metal bars holding down all black notes, and most white ones, lying above these. Rhythmically it develops first through patterns of notes with 3 and 2 semiquaver durations (forming into particular recurring groups), and then single semiquavers with the introduction of the dyad. Otherwise, the piece is motored by shifts in dynamics and a general increase in density towards the conclusion.

The full text of the passage from the *Tao Te Ching,* Chapter 56, which supplies the title for the Fifth Sonata, *"settle your dust, this is the primal identity"* (2003) is as follows:

Those who know don't talk.
Those who talk don't know.
Close your mouth,
block off your senses,
blunt your sharpness,
untie your knots,
soften your glare,
settle your dust.
This is the primal identity.
Be like the Tao.
It can't be approached or withdrawn from,
benefited or harmed.
honoured or brought into disgrace.
It gives itself up continually.
That is why it endures.

The movement titles come from elsewhere in the *Tao Te Ching*, that for the first movement from chapter 41 ('Thus it is said: / The path into the light seems dark, / the path forward seems to go back, / the direct path seems long, / true power seems weak, / true purity seems tarnished, / true steadfastness seems changeable, / true clarity seems obscure, / the greatest art seems unsophisticated, / the greatest love seems indifferent, / the greatest wisdom seems childish.'), the second from chapter 1 ('Darkness within darkness. / The gateway to all understanding.'), and the third from chapter 52 ('Seeing into darkness is clarity. / Knowing how to yield is strength. / use your own light / and return to the source of light. / This is called practising eternity.'), which Rădulescu would also use for the title of the Sixth Sonata.

As in the Fourth Sonata, Rădulescu makes prominent use of a range of Romanian folk melodies, here from a wider range of sources which dominate the movement to a greater extent, and are sometimes superimposed in a quasi-Ivesian manner. For the first movement, these are a folk song from Cristior, Bihor,[51] a melody for *fluier* (a type of Romanian flute), entitled *Trei Păzeste*,[52] further folk songs from Delan[53] and Sebiş,[54] Bihor, and a violin melody *Bucuirmeana* (a dance from Bucum), from Bistra,[55] also set by Bartók in his *Román nepi táncok/Romanian Folk Dances* for piano (1915), no. 4. In the second movement, Rădulescu sets a Romanian bagpipe melody *Doinä*, again from Bihor,[56] and in the last movement a further *fluier* melody, *Marşul Cerbului (pe uliţa)*.[57]

The 'spectral' sections of the first movement are dominated by another 'Brancusi infinite column' assembled from alternating minor thirds and perfect fifths. Most of the harmonies are of this type, which Rădulescu morphs into others which retain one common pitch (at the beginning, $F_4$, played incessantly). Then in the fifth and sixth bars, he shifts to chords deriving from partials of two fundamentals ($E_0$ and $F\#_0$ respectively) (Fig. 17).

Fig. 17. Rădulescu, Fifth Sonata, opening. © Lucero Press, 2020.

Soon afterwards, Rădulescu introduces a different type of column, now built from alternating major seconds and perfect fifths, creating a correspondence with one of the earlier chords made up of partials because of the predominance of the former interval.

The first folk music passage has a 2:1 two-part mensuration canon (linked to the preceding section with the continuation reiterated $F_4$s), then a three-part canon in a 4:2:1 ratio on a different melody, leading to a double canon employing two melodies (one a three-part 4:2:1 canon, the other a two-part 2:1 canon). Other canons - such as the three-part one based on *Bucuirmeana*, which is shown in Bartók's transcription and arrangement in Fig. 18a and 18b - are in one of these categories, with increasingly dissonant key relationships in the double canons, and superimpositions with the

'spectral' material, until a climactic moment after a pause, in which a double two-part 2:1 canon is combined with a third single folk line.

Fig. 18a. Bartók, Romanian violin melody *Bucuirmeana*, from Bistra, as collected in *Rumanian Folk Music. Volume One: Instrumental Melodies*, no. 175.



Fig. 18b. Bartók, *Román népi táncok* (*Romanian Folk Dances*) (1915), no. 4.

As transcribed by Bartók, *Bucuirmeana* has an irregular metre, which does not on its own imply any sort of regular pulse other than for a few beats, notwithstanding the very fast tempo. This transcription is closer to Rădulescu's setting than Bartók's own languid and melancholy version for piano, in which he gives it a regular 3/4 pulse, smooths out some of the rhythms, removes the grace notes, and adds a chromatic accompaniment. By contrast, Rădulescu sticks more closely to the stridency and rhythmic edge of the original for his setting in a mensuration canon (Fig. 18c), though he generates a firm sense of driving pulse, paying little heed to the barlines in Bartók's transcriptions - unusually, compared to most of his other folk music settings. He underlines the crotchet-based metre through the regular semiquavers and canonic treatment. The latter generates regular quavers or crotchets in the slower parts.

Fig. 18c. Rădulescu, Fifth Sonata, first movement, bars 60-64. © Lucero Press, 2020.

The first movement is the most intricate sonata-like design so far. It opens with a first subject group, group A, from the Brancusi columns and other fields, centred around $F_4$, with rhythms constructed from continually oscillating durations of 6 – 4 – 2 – 4 – 6 – 4 – 2 – etc semiquavers, centred on the $F_4$s, and expanding and contracting tessitura; then a second subject group, B, made up of the four mensuration canons, each increasing the sense of density and momentum.

These canons move from relative simplicity to striking superimposition: (a) a two-part 2:1 canon around the song from Cristior, in F major; (b) a three-part 4:2:1 canon using the *fluier* melody *Trei Păzeste*, on a six-note mode on G (G-A-B-C-D-E); (c) a double mensuration canon: three-part 4:2:1 canon on the song from Delan, on a four-note G-B♭-C-D mode, and two-part 2:1 canon on the song from Sebiş, in B♭ major (so as if a major key and its relative minor are heard together); (d) a three-part 4:2:1 canon on *Bucuirmeana*, on a Phrygian Dominant mode on A (A-B♭-C#-D-E-F-G). he result is not merely cumulative but increasingly volatile, as folk-derived materials begin to collide with one another and with the spectral field.

The development section is in an A'-B'-A"-B"-A+B form. It begins with a continuation of the first subject group, now centred around B♭, with greater dynamic variation, followed by the double mensuration canon from the second subject group, now transposed up a perfect fourth, then a return to the opening material but truncated. After this, the B" section is a transposition down a perfect fifth of the fourth canon from B, which is then combined with the two-part canon from the double mensuration canon. The A+B section, increasingly dissonant and reckless, combines the opening material of the sonata, now centred around E, with the first two-part canon from the B section, the latter leading to the second canon from B. The A ('spectral') material is removed as the music shifts to the third (double) canon alone, then the two-part canon from this is replaced by the fourth canon, before returning briefly back to the double canon. Following a short hiatus of resonance, a new variant is introduced, a four-part canon extracted from the double canon, which is then joined by the basic melody from the second B canon.

The recapitulation restores the opening material, now centred around G, but it does not simply resolve the earlier conflict. The the second subject group is represented by the second canon, now in D, while the A material continues simultaneously. Then the A material returns centred on C, followed by the double canon, in B♭ minor and D♭ major, but now interspersed with quite violent interjections of the passages from the A material which spanned the whole keyboard. The coda is a further double canon, like that at the end of the recapitulation, but transposed down an octave, with the return of a drone, here on A♭, to match the F drone from the beginning of the B section of the exposition. In total, with so many interplays between materials, the driving qualities of the various canons, and the high virtuosity as more and more materials are superimposed, the movement becomes one of the most dynamic and brilliant of all in Rădulescu's sonatas.

The second movement is more straightforward. It begins with a full iteration of the bagpipe melody *Doinä*, followed by a simple three-part 4:2:1 mensuration canon, in a B♭-C-D-E-F-G-A♭ mode. As a counterpart to the overlaying of such canons with 'spectral' material in the first movement, Rădulescu introduces a few pseudo-spectral modi constructed from minor ninths (thus highly distinguished from the bagpipe melody) at strategic moments (Fig. 19).

Fig. 19. Rădulescu, Fifth Sonata, second movement, bars 28-33. © Lucero Press, 2020.

The last movement takes the drone principle from the first much further, featuring a relentless drone on $C_5$ throughout, marking the uneven metre through durations of 4-6-4-5 semiquavers (which may

be a particular variety of the *aksak* metric pulse found in various Balkan music, combining units of unequal length).[58] The pitch content for the first fifty bars is taken entirely from a single Brancusi column made from minor thirds and perfect fifths, though Rădulescu creates variation through contrasts between perpetual repeated notes and other semiquaver patterns spanning increasingly wide tessitura, and rhythmic doublings of the drone with widely spaced pitches from within the column, again creating pseudo-spectral harmonies. The second half of the movement features the *fluier* melody *Marsul Cerbului (pe ulita)*, in a five-note mode, F-G-A-B-C, with solo (together with the drone), then in a two-part 2:1 mensuration canon. The movement as a whole has a static and monumental quality reminiscent of the mighty finale of the Third Sonata, but quite at odds with the more discursive writing of the finales of the Second and Fourth.

The Sixth Sonata, *"return to the source of light"* (2007), was Rădulescu's last completed work, commissioned by the TRANSIT festival in Leuven, where I gave the premiere on 27 October 2007. The full text of the passage from the *Tao Te Ching,* Chapter 52 which supplies its title is as follows:

In the beginning was the Tao.
All things issue from it;
all things return to it.
To find the origin,
trace back the manifestations.
When you recognise the children
and find the mother,
you will be free of sorrow.
If you close your mind in judgements
and traffic with desires.
your heart will be troubled.
If you keep your mind from judging
and aren't led by the senses,
your heart will find peace.
Seeing into darkness is clarity.
Knowing how to yield is strength.
Use your own light
and return to the source of light.
This is called practising eternity.

I have not located any specific source for the title of the second movement, 'Kalotrope of the Eternal'. A kalotrope is a particular type of thaumatrope (a nineteenth-century scientific toy with a disc with pictures on either side, which appear as a single image upon rotating the disc) which is used to project various effects due to persistence of vision. Rădulescu had previously written a set of pieces, *You-Tree Kalotrope I-III* (1984) for tuba and double bass, crystal bachet and vibraphone respectively (the latter also exists in a 2004 version for organ).

Once again Rădulescu alternates 'spectral' material with Romanian folk melodies; here however just two of these, a more limited range than in the Fifth, though processed and combined quite relentlessly. These were both collected by Bartók in the Bihor county: first a folk song from Delan,[59] then one from Vaşcău-Selişte.[60] The first is always set in a six-note minor mode on B♭, the second in B♭ major, creating an obvious clash when they are combined.

The first movement stretches sonata-like thinking almost to breaking point. Its first subject group is spectral and ostinato-driven, organised at first around of $D_1$ , to which to which Rădulescu adds first

the 9th and 10th , then the 19th partials (so a 'healthy' combination) (Fig. 20). The movement as a whole is dominated by a 5+4+4+4 (= (3+2)+(2+2)+(2+2)+(2+2)) rhythmic ostinato, which may be understood as a variant of *aksak* metric pulse.

Fig. 20. Rădulescu, Sixth Sonata, opening. © Lucero Press, 2020.

Later within the first section group the note values are doubled, then this new pattern is combined with the original ostinato, and elsewhere the rhythm is staggered between the hands.

Gradually Rădulescu thickens the harmonic field, adding extra partials and increasing the dissonance before arriving at the first sequence which he labels δ. This sequence still has spectral logic, but the chords that follow introduce tritones, minor ninths and close-packed formations which resist any straightforward harmonic-spectrum explanation. The δ-sequence recurs in various transpositions, then with the hands desynchronised to create new harmonies.

The second subject group is made from mensuration canons. Rădulescu first sets the Delan song as a three-part 4:2:1 canon, then turns it into a four-part 8:4:2:1 canon by adding a still faster voice. After a return of the opening material, the same process is applied to the brighter Vaşcău-Selişte song. The effect is not simply contrapuntal complexity but a tightening of melodic material into a more mechanised, plasmatic body.

The development section unfolds in four large waves. The first revisits the earlier spectral episodes, including ρ material derived from a δ-chord transposed by a tritone, further variants in the form of chords assembled from wide intervals of over an octave, which relate to the earlier prominent major seconds and minor ninths,  and later μ material that spreads minor sixths, major sevenths and minor ninths across the keyboard.

The second wave contains the most convoluted of Rădulescu's mensuration canons, a double canon combining Vaşcău-Selişte in an 8:1 ratio with Delan in a 2:1 ratio (Fig. 21).

Fig. 21. Rădulescu, Sixth Sonata, first movement, bars 241-244. Double mensuration canon, top parts two-part canon with 8:1 ratio, based upon folk song from Vaşcău-Selişte; bottom parts two-part canon with 2:1 ratio, based upon folk song from Delan. © Lucero Press, 2020.

The third compresses δ and μ materials still further, while the fourth produces a gnarled combination of a 2:1 ratio two-part Vaşcău-Selişte and three-part 4:2:1 Delan canon, with the grace-note figurations compressed into chords and semiquaver patterns. The second part of this wave combines a rendition of the earlier 8:4:2:1 Delan canon, while a version of the Vaşcău-Selişte material, in the manner of the 4:2:1 canon but with the addition of pitch material from the 8:4:2:1 canon, now compressed mostly into recurrent semiquavers which add extra momentum.

The final coda-like section of this movement embodies a genuine harmonic and textural rupture. The earlier spectral and canonic materials give way to two Brancusi columns, built from minor thirds and perfect fifths, the second column a major 16th higher than the first. The rhythms in the lower part (Fig. 22) are best viewed as an elaboration of the basic ostinato, and the upper part a breaking-down of this ostinato into its core elements of 3 or 2 semiquavers.

Fig. 22. Rădulescu, Sixth Sonata, first movement, bars 316-322. © Lucero Press, 2020.

This is expanded and combined with a further descending line from the same column, creating moments of transcendental virtuosity as the performer has to navigate fearsome leaps across the keyboard. A shrill second rendition of most of this is essentially the same material set in a much higher register.

The second movement is a re-working of the fourth movement of the cello and piano sonata *L'exil intérieur* (1997) (a work in a similar idiom to the Lao Tzu sonatas), just as the second movement of the Fourth Sonata had been rescored as the second movement of this duo. Rhythmically it is very similar to *The Origin* throughout. Harmonically it is made up of an interplay between six types of harmonies: (i) a Brancusi column from alternating minor thirds and perfect fifths; (ii) a second Brancusi column; (iii) intervals of a perfect fifth with the upper note displaced by two or three octaves (so that it is the $6^{th}$ or $12^{th}$ partial of the lower note respectively); (iv) single pitches in the bass register, like lone fundamentals; (v) a 'healthy' combination of the $4^{th}$, $13^{th}$ and $17^{th}$ partials of a fundamental; and (vi) another more complex 'healthy' combination of the $7^{th}$, $8^{th}$, $15^{th}$ and $23^{rd}$ partials of a fundamental (see Fig. 23 for some examples of these). The latter two are more occasional and enter more gradually. They are supplemented by two more dissonant and 'unhealthy' harmonies in the later section of the movement: (vii) a version of (ii) but with a jarring interval of a fourth between the lower two pitches, and sometimes also with just the lower fourth; (viii) another 'healthy' combination of $4^{th}$, $13^{th}$, $17^{th}$ and $30^{th}$ partials. Throughout, the incessant repetition of $A_2$, either alone or with one other pitch, more consistently than any other potential pitch centre, leads this to assume tonal centrality, so that other harmonies should be heard relative to this.

Fig. 23. Rădulescu, Sixth Sonata, second movement, opening. © Lucero Press, 2020.

The performance of Rădulescu's piano music raises questions which can be reduced neither simply to technical execution nor to the application of a single 'correct' analytical reading. The works invite a two-way interaction between analysis and performance: an understanding of their sources, forms, harmonic fields and textures can inform interpretation, but the experience of playing them also reveals ways in which these materials can behave physically and aurally. Different decisions about voicing, touch, tempo, pedalling, rhythmic emphasis or tempo flexibility can project quite different

conceptions of the music: as ritual, dance, spectral sonority, folk-derived whirl, or as a form of spiritual but atavistic theatre.

The titles provide one point of entry. In the First Sonata, the image of the “cradle” can be preserved in the rare calmer passages through steadiness of pulse, minimal dynamic inflection and melodic stillness, while the surrounding music evokes not emptiness but abysses of force, violence and momentum. Other titles suggest particular qualities of sound: a detached, bell-like sonority for ‘Byzantine Bells’; bright, ringing clarity for “trumpets of the eternal”; sharply differentiated dark and light sonorities in the Fifth Sonata. Even apparently exuberant material may require a darker or more strident projection, as in the “darkness within darkness” of the Fifth Sonata’s second movement.

The borrowed materials also imply distinct performance choices. The Byzantine chants and Romanian folk melodies should not necessarily be treated as expressive melodies in a familiar Western sense. Some passages gain much of their power from sounding distant, ritualised or impersonal, as if heard from afar; too much conventional shaping can domesticate them. In other places, however, especially in the folk-based canons of the Fifth and Sixth Sonatas, the music should retain something physical, earthy and dance-like. These are not pale evocations but vivid, driven transformations of song and dance materials into something larger and stranger.

A central issue is whether individual lines should be projected clearly or subsumed within larger sonic masses. Rădulescu’s own idea of ‘sound plasma’ suggests a music in which pitches, rhythms and attacks may become parts of broader fields of density, resonance and colour. The canons are often less contrapuntal displays than means of transforming chant or folk material into continuous sound-bodies. Even where one line is marked as more prominent, this need not destroy the sense of a larger plasmatic texture. The performer must therefore decide, from passage to passage, how much to clarify the constituent lines and how much to allow them to merge.

Harmony and register are equally important. Rădulescu’s sonorities are not octave-neutral collections of pitches: their specific spacing, height and depth are integral to their identity. Low fundamentals, false fundamentals, high resonant pitches and extreme registral spans all affect the music’s force. A performer can respond by weighting some notes as structural or foundational and others as colour, resonance or dissonant intensification. This is especially important in the Third Sonata, where certain high figures may be heard less as melodic lines than as extensions of a sonority, and where changing degrees of harmonic tension can justify subtle changes of voicing, touch or local pacing.

Form is important, but it should not become a rigid template imposed on the music. Several first movements can be heard in relation to sonata form, as I have described above, with contrasting subject groups, transitions, developments and returns. Such an understanding can help the performer bind together large and diverse spans, or articulate points of return and transformation. A slight ritardando before an apparent or real recapitulation may give the subsequent resumption of tempo a rhetorical charge. Yet the degree of contrast must be judged carefully: in some movements, severe opposition between materials is powerful; in others, too much contrast risks making the music sound overly diffuse or episodic.
Rhythm and tempo are crucial to the sonatas’ impact. Many movements depend on obsessive

rhythmic cells, ostinati and repeated patterns which create an inexorable sense of motion; excessive flexibility can weaken this. Rădulescu seems to have valued rhythmic precision highly, and his experience of hearing computer playback shaped his expectations of exact tempi and notes. At the same time, the folk and chant sources suggest other subtleties. In canonic passages, small accents, tenuti or differences of voicing can alter whether the listener hears a clear metre, a broader pulse, or a more floating continuity.

Rădulescu often indicated to me a wish that his grace notes not be played too quickly. It is always worth noting that Romanian can be thought of as a syllable- rather than stress-timed language, in which syllables are generally isochronous, rather than featuring distances between stresses. The clarity and accuracy of this distinction, and the possibility of its objective measurement, have been critiqued for many decades by multiple linguists.[61] Nonetheless, it remains a reasonable model to consider for performance, bearing in mind the implications of relative lack of very short syllables for the diction of a music which often has roots in vocal idioms originally sung in Romanian. This should not be treated as a strict linguistic explanation of Rădulescu's notation, but it offers a useful analogy for performance: quicker notes need not become weightless or clipped, and even subsidiary notes may retain a certain bodily presence.

Touch is one of the performer's most important resources. A semi-detached touch, often with pedal, can articulate the rhythmic profile of the music while preserving resonance. Bell-like movements call for a certain detachment; massive chordal writing needs power without mere percussiveness; some repeated-note and ostinato passages require steadiness rather than over-emphasis. Elsewhere, a legatissimo touch can make a folk melody sound distant and suspended, while a sharply articulated arpeggio or chord can function as a theatrical rupture. Rădulescu always wished for the widest dynamic range available, with an emphasis upon depth of sound (lighter, thinner writing is rare in these works) and studious attention to his pedal markings where they exist. Pedalling can also change the very meaning of a passage: in the Third Sonata's funeral-like second movement, for example, continuous pedalling creates an inexorable field of resonance, while changing pedal during rests can fragment the bass tolling and make death seem imminent rather than fully present.

Finally, the sonatas demand virtuosity of a very particular kind. The difficulty is not merely athletic display, though the Third, Fifth and Sixth Sonatas contain passages of extreme physical challenge. Virtuosity is tied to structure, drama and rhetoric. In some places the pulse should be preserved even at the risk of wrong notes, because broadening would damage the music's obsessive propulsion. In others, especially where structurally significant harmonic formations appear, a controlled broadening can heighten the drama. The close of the Sixth Sonata turns sheer physical exertion into theatrical culmination. These works therefore require not just accuracy and stamina, but an ability to make technical extremity serve sonority, form and ritual intensity.

# Endnotes

1. In general, Rădulescu opted to omit the diacritics from his name during much of the time after he left Romania. Nonetheless, in keeping with other writings on the composer, I have opted to retain them here, except in titles of texts in which they are omitted.
2. Bob Gilmore, Biography of Horaţiu Rădulescu, at https://horatiuradulescu.com/ (accessed 25 May 2026).
3. Bob Gilmore, '"Wild ocean": An interview with Horatiu Radulescu', Contemporary Music Review, vol. XXII, nos. 1-2 (March-June 2003)
4. Gilmore, Biography.
5. See Liviu Marinescu, 'Horațiu Rădulescu and the Intangible Dimensions of Plasmatic Music', in Amy Bauer, Liam Cagney and William Mason (eds.), The Oxford Handbook of Spectral Music (New York: Oxford University Press, 2025), pp. 485-503 for more on Niculescu's pedagogy and the context of Romanian contemporary music and politics in which Rădulescu's early work developed.
6. See Marinescu, 'Horațiu Rădulescu and the Intangible Dimensions of Plasmatic Music', for more on Niculescu's pedagogy.
7. Bob Gilmore, Liner notes for Horatiu Radulescu, Lao Tzu Sonatas, played by Ortwin Stürmer, CD CPO 999 880-2 (2014).
8. Bob Gilmore, 'Spectral techniques in Horatiu Radulescu's second piano sonata'. Tempo, vol. 64, no. 252 (April 2010), pp. 67-8.
9. Horatiu Radulescu, Sound Plasma: Music of the Future Sign (Munich: Edition Modern, 1975). This work was conceived as a non-linear text, and pages (sets of two are referred to as 'planets') are referenced with lines from a guiding poem. The text itself, in which the theoretical component is literally overlaid by what Radulescu called 'stardust poetry', much more informal and poetic utterances in larger handwriting on the page, going in many directions, was originally conceived as a PhD submission in Semantics and Musicology at the Sorbonne. See 'In Writing', at https://horatiuradulescu.com/in-writing/ (accessed 25 May 2026). A summary of some of the main points can be found in Heaton, 'Horatiu Radulescu: "Sound Plasma"', pp. 23-4.
10. Ibid.
11. Wider espousals of the terms evolution and involution can be found in the work of Helena Blavatsky, William Quan Judge and George Gurdjeff; a selection of appropriate passages can be viewed at 'Evolution and Involution' at https://theosophylib.com/key-concepts/evolution-and-involution/ (accessed 25 May 2026).
12. Rădulescu, Sound Plasma, 'Cardinal Points of the Sound Compass'. Planet: Crushing the Crumbled Skies [CCS].
13. For further thoughts on tendencies towards mystification in Rădulescu's writings, see Martin Suckling, 'Rădulescu: The Other Spectralist', Tempo, vol. 72, no. 285 (2018), pp. 20-40.
14. In an essay published a decade later, Rădulescu returned to some of the concepts in Sound Plasma, combined with a new degree of interest in spectra and scordatura, and related these to his intervening works. See Horaţiu Rădulescu, 'Musique de mes univers', Silences, no. 1 (1985), pp. 50-56.
15. Rădulescu, Sound Plasma, 'Global Sources'. Planet: Vague Lament and Wave [VLW].
16. Ibid. 'Conceal Cause & Effect'.
17. Roger Heaton, 'Horatiu Radulescu: "Sound Plasma"', Contact, no. 26 (1983), p. 23.
18. Helmuth Flammer dwells at length upon the importance of Romanian cultural identity - manifested through folk music and a type of 'pan-religiosity' - for Rădulescu as an exile in France, from 1969 (later in Germany and then Switzerland), attributing his decision to leave his home country to the denial of such cultural identity by the

Ceauşescu regime. However, he does not really account for why explicit allusions to folk music came only more than two decades after the beginning of the composer's exile. See Ernst Helmuth Flammer, 'Horaţiu Rădulescu: Klangvisionär der Comedia Divina'. Musik & Ästhetik, vol. 17, no. 66 (April 2013), pp. 79-95.
19. Horatiu Radulescu, 'Brain and Sound Resonance: The World of Self-Generative Functions as a Basis of the Spectral Language of Music', Annals of the New York Academy of Sciences, vol. 999 (November 2003), p. 341. This article contains Rădulescu's most explicit articulation of his spectral techniques.
20. See Gilmore, 'Spectral techniques in Horatiu Radulescu's second piano sonata', pp. 66-78.
21. Antonio Lai, 'Il linguaggio di Horatiu Radulescu e il movement spettrale', Musica/realtà: Rivista quadrimestrale, vol. 26, no. 77 (July 2005), p. 168; 'Le langage spectral de Horatiu Radulescu', L'éducation musicale, vols. 527-8 (November-December 2005), p. 54.
22. See Gilmore, 'Spectral techniques in Horatiu Radulescu's second piano sonata', p. 68, for the argument that this work anticipates the musical language of the piano sonatas.
23. Stephen Mitchell, Tao Te Ching: A New English Version (New York: Harper Collins, 1988).
24. Gilmore, 'Spectral techniques in Horatiu Radulescu's second piano sonata', pp. 72-5.
25. Sandu-Dediu, Rumänische Musik nach 1944, pp. 71-85; Jim Samson, Music in the Balkans (Leiden and Boston: Brill, 2013), p. 460.
26. Nicolae Gheorghiţă, 'Pann, Anton [Pantoleon, Petroveanu, Pană, Petrovici]', at Grove Music Online (accessed 25 May 2026); Anton Pann, *Bazul teoretic şi practic al muzicii bisericeşti* (Bucharest: self-published, 1845).
27. J.D. Petresco, Les Idiomèles et le Canon de L'Office de Noël (D'après des manuscrits grecs des XIo, XIIo, XIIIo et XIVo S) (Paris: Librairie Orientaliste Paul Geuthner, 1932); Études de paléographie musicale byzantine (Bucharest: Editura Muzicală, 1967); Grigore Panţîru, Notaţia şi ehurile muzicii byzantine (Bucharest: Editura Muzicală, 1971); Gheorghe Ciobanu, Studii de etnomuzicologie şi bizantinologie, two volumes (Bucharest: Editura Muzicală, 1974/1979); Victor Giulenau, Melodica Bizantină (Bucharest: Editura Muzicală, 1981); Adriana Şirli, I. The Anastasimatarion/I. Anastasimatarul (Bucharest: Editura Muzicală, 1986).
28. Nicolae Gheorghiţă, '*Cercetările* de *muzicologie bizantină* în. *România totalitară', Revista MUZICA, vol. 7 (2015), pp. 39-58.*
29. For a critical perspective on these notational practices, which were consolidated in the work of the Monumenta Musicae Byzantinae, formed in Copenhagen in 1931, see Alexander Lingas, 'Performance Practice and the Politics of Transcribing Byzantine Chant', Acta Musicae Byzantinae, vol. 6 (2003), pp. 56-76. I am immensely grateful to Alexander Lingas for providing me with a wealth of published sources and pointers during the preparation of various writings on Radulescu's piano sonatas, and for much wider and illuminating information drawing upon his expertise in Byzantine chant.
30. Petresco, Les Idiomèles et le Canon de L'Office de Noël, n.p.
31. I have checked a large range of collections including the principal publications in Romanian, the publications of Egon Wellesz, H.J.W. Tillyard, Carsten Høeg, Oliver Strunk and numerous other volumes and articles.
32. See Kenneth Levy and Christian Troelsgård, 'Byzantine chant', at Grove Music Online, and Dimitri Conomos, 'Early Christian and Byzantine music: history and performance', Studies in Music, vol. 5 (1980), pp. 49-63.
33. One recent consideration of this, focusing on forms of the Byzantine melos and the relationship between declamation and singing, is Mădălina Dana Rucsanda and Maria Cristina Bostan, 'The Sacred Music from the Byzantine Tradition and the Romanian Folklore', in Proceedings of the 12th WSEAS international conference on Mathematics and computers in biology, business and acoustics (Athens: WSEAS Press, 2011), pp. 218-21.
34. In Béla Bartók, *Rumanian Folk Music. Volume Five: Maramure*ş County, edited Benjamin Suchoff (The Hague:

Martinus Nijhoff, 1975), no. 23i, p. 65; Also printed in Tiberiu Alexandru, 'The Tilinca, an Ancient Rumanian Folk Instrument', in Studia Memoriae Belae Bartók Sacra, third edition (London, New York, etc.: Boosey and Hawkes, 1959), p. 117.
35. See Rădulescu's comments in Nathalie Krafft, 'Horaţiu Rădulescu: La Composition des Nuages', interview, Le Monde de la Musique, no. 255 (June 2001), pp. 46-9.
36. See Ruth I. DeFord, Tactus, Mensuration and Rhythm in Renaissance Music (Cambridge: Cambridge University Press, 2015), pp. 48-9, 253-7 for basic definitions and examples from Du Fay. For a more detailed exploration of early mensural canons, see Virginia Newes, 'Mensural Virtuosity in Non-Fugal Canons c. 1350 to 1450', in Canons and Canonic techniques, 14th-16th Centuries: Theory, Practice, and Reception History, edited Katelijne Schiltz and Bonnie J. Blackburn (Leuven: Peeters, 2007), pp. 19-46.
37. See Gilmore, 'Spectral Techniques in Horatiu Radulescu's Second Piano Sonata', p. 69.
38. See Gilmore, notes to Lao Tzu Sonatas. I also recall Rădulescu making these associations (Gilmore recalls 'telluric Modest Mussorgsky' and 'divine Igor Stravinsky').
39. Gilmore notes that Rădulescu believed that within 'ring-modulated' sonorities, containing sum and difference tones, octaves should not be transposed downwards. See Gilmore, 'Spectral Techniques in Horatiu Rădulescu's Second Piano Sonata', p. 71. Thus Rădulescu was in this case deviating progressively from such sonorities.
40. This is described by Destarac, ibid., as 'a "Webern" spectral kaleidoscope', but it is not clear whether this is her designation or that of the composer.
41. For example Arthur Lourié's Deux poèmes, op. 8 (1912), the first of Roslavets' Two Compositions (1915), or Obouhow's Prières (1915). See Detlew Gojowy, 'Frühe Zwölftonmusik in Rußland (1912-1915)', in *Beiträge zur Musikwissenschaft* 32/1 (1990), pp. 17-24; Hans Oesch, 'Schönberg und die russischen Avantgardisten um 1920', in *Bericht über den 2. Kongreß der Internationalen Schönberg-Gesellschaft. Die Wiener Schule in der Musikgeschichte des 20. Jahrhunderts*, edited Rudolf Stephan and Sigrid Wiesmann (Vienna; Verlag Elisabeth Lafite, 1986), pp. 108-121; Elena Poldiaeva, *Le message de Nicolas Obouhow: Reconstruction d'une biographie*, translated from Russian by Michèle Kahn (Paris: editions Van de Velde, 2011), pp. 33-42; and George Perle, Serial Composition and Atonality: An Introduction to the Music of Schoenberg, Berg and Webern, sixth edition (Berkeley and Los Angeles: University of California Press, 1991), pp. 40-5.
42. Radulescu, Sound Plasma, 'Conceal Cause & Effect, i.e. Sources & Sound, Parameters'. Planet: These Occult Oceans where Melancholy [TOO].
43. Jacobus de Voragine, 'The Greater and Lesser Litanies', in The Golden Legend: Readings on the Saints, translated William Granger Ryan, with an introduction by Eamon Duffy, revised edition (Princeton, NJ: Princeton University Press, 2012), p. 287.
44. In Béla Bartók, *Rumanian Folk Music. Volume Four: Carols and Christmas Songs, edited Benjamin Suchoff (The Hague: Martinus Nijhoff, 1975), no. 55, p. 92.*
45. Ibid., no. 73m, p. 121.
46. Ibid., no. 18, p. 66.
47. Ingrid Arauco, 'Bartók's Romanian Christmas Carols: Changes from the Folk Sources and Their Significance', The Journal of Musicology, vol. 5, no. 2 (Spring 1987), pp. 191-225.
48. Rădulescu himself presented these in a different manner, however, in terms of spectrums on E and F, but these would require various octave transpositions. See Radulescu, 'Brain and Sound Resonance', pp. 359-61.
49. See Constantin Brăiloiu, 'Le rhythme Aksak', Revue de Musicologie, vol. 33, nos. 99-100 (December 1951),

pp. 71-108; Jérôme Cler, 'Pour une théorie de l'aksak', Revue de Musicologie, vol. 80, no. 2 (1994), pp. 181-210; Nice Fracile, 'The Aksak Rhythm, a Distinctive Feature of the Balkan Folklore', Studia Musicologica Academiae Scientarum Hungaricae, vol. 44, nos. 1-2 (2003), pp. 197-210.
50. See Arauco, 'Bartók's Romanian Christmas Carols', p. 203, for the much more heavily embellished initial version from Bartók's original transcription.
51. In Béla Bartók, *Cântece poporale româneşti din comitatul Bihor (Ungaria) (Bucharest: Librăriile Soce & Co, 1913), no. 46, p. 34. Also printed in more embellished form in* Béla Bartók, *Rumanian Folk Music. Volume Two: Vocal Melodies, edited Benjamin Suchoff (The Hague: Martinus Nijhoff, 1967), no. 88, p. 161.*
52. In Corneliu Dan Georgescu, Jocul Popular Românesc: Tipologie muzicală şi melodii instrumentale/Romanian Folk Dance Music: A Typology of the Instrumental Tunes (Bucharest, Editura Muzicala, 1984), no. 54, pp. 145-6.
53. In Bartók, *Cântece poporale româneşti, no. 210, p. 195*
54. In ibid.*, no. 150, p. 134. Also printed in Bartók, Rumanian Folk Music. Volume Two: Vocal Melodies, p. 128*
55. In Béla Bartók, *Rumanian Folk Music. Volume One: Instrumental Melodies, edited Benjamin Suchoff (The Hague: Martinus Nijhoff, 1967), no. 175, p. 181.*
56. In Bartók, *Cântece poporale româneşti, no. 360, p. 347.*
57. In Bartók, *Rumanian Folk Music. Volume One, no. 161, p. 170; also in* Georgescu, Jocul Popular Românesc, no. 520, pp. 564-5.
58. See Constantin Braïloiu, 'Le rhythme Aksak', Revue de Musicologie, vol. 33, nos. 99-100 (December 1951), pp. 71-108; Jérôme Cler, 'Pour une théorie de l'aksak', Revue de Musicologie, vol. 80, no. 2 (1994), pp. 181-210; Nice Fracile, 'The Aksak Rhythm, a Distinctive Feature of the Balkan Folklore', Studia Musicologica Academiae Scientarum Hungaricae, vol. 44, nos. 1-2 (2003), pp. 197-210.
59. In Béla Bartók, *Cântece poporale româneşti din comitatul Bihor (Ungaria) (Bucharest: Librăriile Soce & Co, 1913), no. 164, p. 149. Also printed in* Béla Bartók *Rumanian Folk Music. Volume Two: Vocal Melodies, edited Benjamin Suchoff (The Hague: Martinus Nijhoff, 1967), p. 713.*
60. In Bartók, *Cântece poporale româneşti, no. 222, p. 205.*
61. See Peter Roach, 'On the distinction between 'stress-timed' and 'syllable-timed' languages', in Linguistic Controversies: Essays in Linguistic Theory and Practice in Honour of F.R. Palmer, edited David Crystal (London: Edward Arnold, 1982), pp. 73-9; R.M. Dauer, 'Stress-timing and syllable-timing reanalyzed', Journal of Phonetics, vol. 11, no. 1 (1983), pp. 51-62. The dichotomy was first theorised in Kenneth L. Pike, The Intonation of American English (Ann Arbor, MI: University of Michigan, 1945).

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## Ian Pace, piano

Ian Pace is a pianist of long-established reputation, specialising in the farthest reaches of musical modernism and transcendental virtuosity, as well as a writer and musicologist focusing on issues of performance, music and society and the avant-garde. He was born in Hartlepool, England in 1968, and studied at Chetham's School of Music, The Queen's College, Oxford and, as a Fulbright Scholar, at the Juilliard School in New York, later completing his PhD, on the origins of post-war German new music and its infrastructure under occupation, at Cardiff University. His main piano teacher, and a major influence upon his work, was the Hungarian pianist György Sándor, a student of Bartók.

Based in London since 1993, he has pursued an active international career, performing in 26 countries and at most major European venues and festivals. His absolutely vast repertoire of all periods focuses particularly upon music of the 20th and 21st Century. He has given world premieres of over 350 piano works, including works by Patrícia de Almeida, Gilbert Amy, Julian Anderson, Richard Barrett, Konrad Boehmer, Luc Brewaeys, Aaron Cassidy, James Clarke, James Dillon, Pascal Dusapin, Richard Emsley, James Erber, Brian Ferneyhough, Michael Finnissy (whose complete piano works he performed in a landmark 6-concert series in 1996, and then again in an 11-concert series in 2016-17), Christopher Fox, Sam Hayden, Volker Heyn, Wieland Hoban, Evan Johnson, Maxim Kolomiiets, André Laporte, Hilda Paredes, Alwynne Pritchard, Horatiu Radulescu, Lauren Redhead, Frederic Rzewski, Thoma Simaku, Howard Skempton, Michael Spencer, Gerhard Stäbler, Yuji Takahashi, Serge Verstockt, Hermann Vogt, Marc Yeats, Alistair Zaldua and Walter Zimmermann. He has presented cycles of works including Stockhausen's *Klavierstücke I-X*, and the piano works of Ferneyhough, Fox, Kagel, Ligeti, Lachenmann, Messiaen, Radulescu, Rihm, Rzewski and Skempton. He has played with orchestras including the Orchestre de Paris under Christoph Eschenbach (with whom he premiered and recorded Dusapin's piano concerto *À Quia*), the SWF Orchestra in Stuttgart under Rupert Huber, and the Dortmund Philharmonic under Bernhard Kontarsky (with whom he gave a series of very well-received performances of Ravel's Concerto for the Left Hand). He has recorded around 40 CDs; his recording of Michael Finnissy's five-and-a-half hour *The History of Photography in Sound* (of which he gave the world premiere in London in 2001) was released by Métier in October 2013 to rave reviews. Recent recordings have included piano music of Marc Yeats, the complete piano works of Sam Hayden, and the complete works of Brian Ferneyhough. Forthcoming recordings include the complete piano works of Horatiu Radulescu, and new recordings Volker Heyn. Recent concerts have included appearances in Paris, Lisbon, Zürich, at the Ruhrtriennale in Duisburg (giving the German premiere of *The History of Photography in Sound*), Oslo, Prague, Kiev, São Paolo, Florianapolis, a tour of Japan, and around the UK. In 2018, BBC Radio 3 broadcast a special two-hour issue of the programme *Here and Now* devoted to his work, the first time this had been done for a single artist.

He is Professor of Music, Culture and Society at City University, London, and University Advisor – Interdisciplinarity, and was Head of the Department of Music from 2020 to 2021. In 2023 he moved to the Department of Sociology and Criminology in the School of Policy and Global Affairs. He previously held positions at the London College of Music and Media, University of Southampton, Trinity Laban Conservatoire and Dartington College of Arts. His research interacts with musicology, performance studies, history, politics, sociology and wider realms of culture; areas of academic expertise include

the breadth of 19th, 20th and 21st century art music, 19th century performance practice (especially the work of Liszt and Brahms), musical historiography, contemporary performance practice and issues, music and culture under fascism and communism, the post-1945 avant-garde, in particular in West Germany issues of music and society (with particular reference to the work of Theodor Adorno, the Frankfurt School, and their followers), critical musicology, and music education at secondary and tertiary levels. He also teaches areas including classical social theory, cultural sociology, urban sociology and popular music.

He co-edited and was a major contributor the volume *Uncommon Ground: The Music of Michael Finnissy*, which was published by Ashgate in 1998, and authored the monograph *Michael Finnissy's The History of Photography in Sound: A Study of Sources, Techniques and Interpretation*, published by Divine Art in 2013. He has also published many articles in *Music and Letters, Journal of the Royal Musical Association, Contemporary Music Review, TEMPO*, *The Musical Times*, *The Liszt Society Journal, Musiktexte*, *Musik & Ästhetik, The Open Space Magazine*, as well as writing for a wider audience in the *Telegraph*, the *Spectator*, *London Review of Books, Times Higher Education Supplement*, *The Conversation*, *International Piano* and *Music Teacher*, as well as making a series of podcasts. He is currently working a new biography of Karlheinz Stockhausen for Reaktion Books.

He also contributed chapters to *The Cambridge History of Musical Performance*, edited Colin Lawson and Robin Stowell (Cambridge: Cambridge University Press, 2012), *Collected Writings of the Orpheus Institute: Unfolding Time: Studies in Temporality in Twentieth-Century Music*, edited Darla Crispin (Leuven: Leuven University Press, 2009), *The Modernist Legacy*, edited Björn Heile (Aldershot: Ashgate, 2009), *Beckett's Proust/Deleuze's Proust,* edited Mary Bryden and Margaret Topping (Basingstoke: Palgrave Macmillan, 2009), *The Oxford Handbook of Musical Performance*, edited Gary McPherson (New York: Oxford University Press, 2022) and *The Oxford Handbook to Spectralism in Music*, edited Amy Bauer, Liam Cagney and William Mason (New York: Oxford University Press, 2025). The volume *Critical Perspectives on Michael Finnissy: Bright Futures, Dark Pasts*, co-edited with Nigel McBride, was published in 2019, and another on *Researching and Writing on Contemporary Art and Artists: Challenges, Practices, and Complexities*, co-edited with Christopher Wiley, in 2020. Forthcoming edited collections, which will be published in 2023-24, include *Writing on Contemporary Musicians: Promotion, Advocacy, Disinterest, Censure*, also co-edited with Christopher Wiley, and *Rethinking Contemporary Musicology: Perspectives on Interdisciplinarity, Skills and Deskilling*, co-edited with Peter Tregear. Other forthcoming publications include monographs on music in Weimar and post-war Germany, a book on Brahms Performance Practice, and a history of specialist musical education in Britain. He also worked with the director Bettina Ehrhardt on the film *Wir fangen ganz von vorn an: Neue Musik für ein Deutschland nach dem Krieg* (2020). He is also a twice-elected trustee of the Society for Music Analysis, for which he is current Awards Officer. He is also co-convenor of City Academics for Academic Freedom, and a founder member of the London Universities' Council for Academic Freedom, for which he acts as Secretary.

He is also a composer; recent works include *Das hat Rrrrasss...* for speaker and piano (2018); the piano pieces *Thirty for Grace* (2019), *Clothcomposers* (2019) and *Schneeriss* (2020); the cycle for singer and ensemble *Matière: Le palais de la mort* (2021); and *Lancashire Rock* (2022) for clarinet, percussion and piano.

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