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Time as the Material and Idea of Music¹

Having taken Plato's and Aristotle's dichotomy of idea (*eidos*, form) and matter (material) as a base, European culture has become accustomed to opposing these categories, and moreover, to giving converse meanings to them. At the same time, the notions of idea and form have naturally been related to order, whereas the notion of material has been related to shapelessness, which provides an opportunity to form it in a variety of ways. Musical time in particular raises interesting questions regarding the relationship between form and matter. Perhaps more than any other human creation, music is ontologically linked to the very *eidos* of time. This essay will consider the different ways in which music has structured time within the Western tradition.

Before addressing musical time in particular, we will find it helpful to briefly consider how philosophers have regarded the question of time more broadly. Among many concepts of time held by philosophers of various epochs, the following ones are worthwhile highlighting as especially interesting and fruitful:

- time is an uninterrupted and indivisible continuity to be associated with the life of the soul (Plotinus, Augustine, and especially Henri Bergson);
- time can be considered as a measure of duration, which is a physical quantity;
- it is rather difficult to relate time as a physical quantity to time as a psychological phenomenon.

One of the most interesting attempts to describe time as both a physical quantity and a psychological phenomenon was made by Henri Bergson in his book *Continuity and Simultaneity*,² written after his famous discussion with Albert Einstein about »the physicists' time« and »the philosophers' time«. He decided »to track all the shifts between the psychological and physical approaches, between time in the usual sense and time in Einstein's view.«³ The first opposition to »Einstein's time« is time in classical physics, which exists independently of space and

1 Translation by Dmitry Gorbатов.

2 Bergson 1923.

3 Ibid., p. 7.

(like space) is empty, being a mere scale. According to Einstein, time and space depend both on each other and on their material ›occupation‹. (The quotation marks here are intended to suggest that this word is already inappropriate, as it is precisely such ›occupation‹ that leads to space-time curvature.)

The second opposition to »Einstein's time« (i.e., »the physicists' time«) is »the philosophers' time«. Alexei Losev, a twentieth-century Russian philosopher who tended to interpret time as »both the continuity of the number and its coming into being [*dlitel'nost' i stanovlenie chisla*]«,⁴ came closest to clarifying this distinction between the two kinds of time. According to Losev,

[...] to experience time means to observe what has exactly happened and what has followed what [...]. Now we are to abstract ourselves [...] from naming the things that flow and to take [...] time as is. It means that we are talking about the exercising of *the number*, about the elapsing of *the number*, about the performing of *the number* [...]. Time, i.e. time taken as is, is the coming of *abstract numbers*, i.e. numbers taken as are, into being.⁵

His appeal to the number is to mark, first of all, the measuring, rational, mathematical aspect of time. The category of coming into being mainly relates to the changeability and fluidity of time, as well as to its ›psychological aspect‹ and ›musicality‹.

The numerical basis of music reveals itself in various ways. Its formal structures might remind us of geometrical figures and bodies taken as ideal constructions, whereas meter reminds us of the very process of counting. If, according to Johann Wolfgang von Goethe's famous opinion, »architecture is frozen music«, then geometry is »architecture« minus artistry and material-physical embodiment. In other words, if one tries to imagine music without its artistic expression, it might be said that its formal structures exist within ›counted‹ time as certain ideal figurative constructions.

Inasmuch as, according to Losev, time in general is the coming of the number into being, then psychological time can be comprehended as the lasting of the number, whereas music is the artistic ›processing‹ of time. Scores, which are basically mathematical schemes and graphs, serve as the abstracted signs of artistic expression, resulting in the coming of music into being through time. Here we come to the main paradox of music. Music is a live and often improvisational

4 Losev 2012, p. 142. By »the number«, Losev meant the main subject of mathematics as a philosophical category, and by »the coming into being«, he meant the timewise aspect of the number taken as a philosophical opposition to the aspect of its simultaneity (translator's note).

5 Ibid., p. 142.

process, as well as a game and an action. At the same time, however, music also tends to present itself as something that has already come into being, which itself, regardless of the fact that music cannot exist other than through time, allows us to perceive the duration of ›the present moment‹ as something real.

Ideas about musical phenomena may be related to non-musical ones (such as nature, characters, feelings, etc.), and such interpretations may vary greatly. Behind all this potential for interpretative variety, however, lies a fundamental reality: the essence of any concrete musical phenomenon is the specificity of its concrete (and inimitable) temporal structure, which is perceived only in this and no other way. Moreover, the various means by which music structures time have given rise to a multitude of compositional and syntactic forms developed throughout its history. It is these time-structuring principles that make the compositions of Baroque, Classicism, Romanticism, and other historical periods so essentially different.

This article does not purport to trace the history of time structuring in music in a comprehensive way; in particular, it does not address musical forms and genres naturally associated with such human activities as dance or ritual. Rather, it focuses on musical genres that developed independently of specific human social activities; this kind of music gradually developed its own unique sense of ›inner time‹. For instance, Baroque music developed a bar-metric organization that reflected an idea of objective space and time adopted by classical mechanics. Such a metric organization may well be referred to as the ›material‹ of music, because this kind of organization was not composed by any person but rather was accepted *a priori* as something taken for granted. However, even such a general and non-individualized aspect of musical organization as meter tends to convey a certain idea: namely, an idea of countable time. Similarly to Isaac Newton's worldview, all musical events are bound up in the flow of pure and objective time, which is itself unaffected by those events. In the meantime, not only does musical meter permit the counting of time, but it also serves as a powerful tool of artistic *affectus*. It is metric pulsation that ›articulates‹ the continuous flow of time and thus facilitates an emergence of the motivic structure that underlies the musical syntax of both the Baroque and Classical eras.

It is especially important to stress one obvious but paradoxical fact: unlike clock rate, the pacing of the beats within a measure is almost always uneven in actual performance, deviating in varying degrees from strictly metronomic time; moreover, the ›metric weight‹ of a strong beat is obviously different from that of a weak beat. At the same time, the temporal structuring of music has

become so expressive precisely because the perception of its discreteness in early music had been overcome. When there is a minimal unit of time measurement (its indivisible ›quantum‹) – as, for example, *khronos protos* in ancient Greek music, *matra* in Indian music, or the shortest beat of the medieval European *modus* – time is perceived as a succession of units of different lengths. Musical meter works on a very different principle, a difference that was investigated by Miron Kharlap (1913–1994), a Soviet musicologist, philologist and pianist. Most notably, meter involves not only a succession of units but also their grouping into larger units: for instance, the grouping of quarter-note beats into fours produces $\frac{4}{4}$ meter. This emerging principle of multiple metrical levels, in turn, highlights the special artistic effect of quantum-based time structuring in the works of oral professional musical and literary artworks, in which »the musical side acts as the *rule* of building the verbal text.«⁶

In contrast, the perception of time in the music from the 18th to the 21st centuries is structured in a complicated ›multi-layer‹ manner: ambivalence, paradox, and inner dynamics are inherent to it. The music of the Baroque era managed to adopt meter, having abandoned the discreteness of time perception. Thus, time in music was liberated from the verbal aspect, so that music itself was freed »from an obligation to be a poetic form.«⁷

It is worth noting that when we measure rhythmic units in terms of temporal quanta (regardless of whether it is Guillaume de Machaut's or Olivier Messiaen's music), we actually measure – paradoxical as it may seem – only the moment of time that we tend to conceive as *the present*, rather than the flowing time itself. Thanks to such continuous temporal ›quanta‹ as *khronos protos*, this moment is not similar to a dimensionless mathematical point; as Kharlap observes, »[...] the ›point‹ (›sign‹) [...] is the least time interval between two beats rather than the very moment of a beat.«⁸ Further, the Russian theorist notes that the beat in the music of the Baroque and Classical eras, unlike that of the previous epochs, becomes similar to the mathematical point. It is exactly this perception of physical time that allows us to measure it by seconds, minutes, and hours.

Unlike rhythmic modes that used to serve as prototypes of musical pieces, the bar-metric organization itself possesses no expression. Pyotr Suvchinsky used the term »chronometric« for music with the even bar-metric pulsation – as

6 Kharlap 1986, p. 12. Here Kharlap means that early music was not yet free of a necessity to structure verbal texts rhythmically.

7 Ibid., p. 70.

8 Ibid., p. 75.

would apply, for example, to most of the Baroque and Classical repertoire⁹ – while Igor Stravinsky, who had shared his friend's ideas completely, believed that such music »develops parallel to the ontological flow of time and penetrates it.«¹⁰ On the one hand, metric pulsation in this kind of music counts time intervals like a clock watch; on the other hand, it builds a hierarchy of moments of the present time (such as motifs, phrases, and periods). In other words, the perception of the present moment in 18th- and 19th-century European music agrees quite well with the fact that the perception of the time flow never stops, and appears ›to reflect‹ the time-counting in physics. It is this precise feeling of an even ›tick-tock‹ time flow that Messiaen was, so to speak, fighting against, having striven to overcome the *now* and to come closer to eternity.

Here we face a dialectic opposition typical for everyday life as well: whichever moment of time we perceive as the present one, it does not prevent us from conceiving either the continuous time flow or an absence of its smallest unit very clearly. It was precisely during the Baroque period that music had thereby, for the first time, come to an idea of constructing its artworks as sections of a time that was infinite *physically*, whereas earlier it used to form the feeling of time that was infinite *transcendentally*. Baroque music enjoys the feeling of the present moment, which (as it does in everyday life) mitigates the shifting point between the past and the future (provided that this shifting point is physically dimensionless).

The Baroque era produced another significant turn, with *eidōs* now interpreted as a *transcendental* idea. The 17th century is an epoch of both the greatest portraits in the art of painting and the musical portraits presented in opera arias. Yet, how different these portraits are from those of the former epochs, even including the time of Renaissance! They have now been expressing not so much an *ethos* as an *affectus* – in other words, an impulse of the soul, a reaction to some particular event, and ultimately, the very existence conceived as ›being through time‹.

Comprehending the phenomenon of time, we can either focus our attention on the changes that take place, or conversely, state their absence. Similarly, Baroque music creates the feeling of movement on the one hand, and the feeling of an unchanging state on the other. It is worth emphasizing that now music helps us perceive time dialectically – that is, as both constancy and inconstancy simultaneously: that's why, when listening to Johann Sebastian Bach, we can highlight one or another mode of perception. For example, Nikolay Rimsky-

9 Suvchinsky 2004, p. 267.

10 Stravinsky 2004, p. 185.

Korsakov noted that »one of the specific features of the music by composers of that period [that is, during the time of Bach and his contemporaries] was that they all knew how to keep one and the same feeling, with no weakening, often for quite a long period of time.«¹¹ On the other hand, Claude Debussy compared Bach's music with an arabesque: »When Bach took over the arabesque, he made it more supple and fluid, and, despite the severe discipline that great master imposed on Beauty, it was able to move with that free, ever fresh fantasy which still amazes us today.«¹²

The 19th-century art of Romanticism had also introduced some essential corrections into the perception of time, as clearly expressed by Ernst Kurth: »The classical perception tends to find something definite in the sound, something that is fixed in itself; whereas Romanticism tends to perceive the sound through its vibration, through an eagerness to go beyond its limiting borders; [...] Classicism looks for something stable and fundamental in the phenomenon of sound, whereas Romanticism looks for that eagerness in it.«¹³

It is, indeed, precisely the music of Romanticism that tends to emphasize the feeling of the lasting of each sound in particular and an entire composition in general: hence Franz Schubert's *himmlische Länge* and Richard Wagner's *Sehnsucht*. In the music of the Romantic era, it is achieved not only through innovations in melody, harmony, and rhythm, but also through the introduction of vibrato to singing (and to violin playing as well), which amplifies the feeling of *beating* as the inner life of the sound. Even the pianoforte, which had been technically updated by the 1830s in terms of its more sustained sound and improved pedal technique, matched the new feeling of music.

The classical principle, which can be described as, so to speak, the sound events within the flow of metered time, is not abandoned, but rather is supplemented with a reciprocal energy of eagerness that fills out a sound, a rest, a motif, a theme, and an entire composition. All expressive means of 19th-century music, such as melody, rhythm, texture, and harmony, highlight the perception

11 Yastrebtsev 1953, p. 53.

12 Cited in Nichols 1998, p. 101. The original passage appeared in *La revue blanche* in May 1901.

»Bach en reprenant l'arabesque la rendit plus souple, plus fluide, et, malgré la sévère discipline qu'imposait ce grand maître à la Beauté, elle put se mouvoir avec cette libre fantaisie toujours renouvelée qui étonne encore à notre époque.« Debussy 1971, p. 34.

13 Kurth 1975, p. 43 (author's translation). »Das klassische Empfinden neigt dazu, das Bestimmte, in sich Gefestigte im Ton zu suchen, die Romantik empfindet ihn vibrierend, in Sehnsucht aus sich herausdrängend; [...] der Klassizismus sucht das Ruhende, das Fundament, die Romantik die Strebung.« Kurth 1920, p. 32.

of making something continuous as a subjective emotional feeling of the life of the sound. And the meter, which is based on this feeling and has now become even more flexible and free, begins to be perceived as something secondary and derivative.

Correspondingly, certain techniques matching the new perception of musical time were developed (phonic, syntactic, and compositional). For instance, one might compare the ›point-like‹ sounding ›atoms‹ of the harpsichord or pianoforte with the reverent pedal sound of the 19th-century or contemporary grand piano. But it's not just the instrument: it is the whole textural, harmonic, and rhythmic organization of Frédéric Chopin's nocturnes that helps their sound become ›continuous‹. The sound as a process has gained its new life in the melody of a new kind: the romantic cantilena that tends ›to stretch‹ the moment and strives to become »an endless melody« (revealing itself in the works of Chopin, Wagner, and Sergei Rachmaninoff in different ways). During the 19th century, the composers' thought was naturally moving towards »the form as a process«; this idea of Boris Asaf'yev,¹⁴ a prominent Soviet musicologist, was inspired by his in-depth listening to music by the composers of the Romantic era.

Later, in 20th-century music, first of all in the oeuvre of Debussy, both chronometric and dynamic structures of a piece of music were often expressed with less clarity; yet, the feeling of sound – or even of a rest – that lasts was amplified. For example, as Suvchinsky wrote, »Debussy's musical material enjoyed a marvelous quality of ›time conductivity‹.«¹⁵ An idea of ›moment-form‹ was thus gradually developed and theoretically explicated by Karlheinz Stockhausen. The brand-new music has been, with special clarity, demonstrating the notion of time as both the material (the sounding matter) and the idea (the structure) – or, to say it more exactly, as their inseparable identity.

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¹⁴ Asaf'yev 1971.

¹⁵ Suvchinsky 2004, p. 271.

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