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THE PERFORMANCE OF TIME (OR THE TIME OF MUSICAL PERFORMANCE)

WILLIAM TEIXEIRA FEDERAL UNIVERSITY OF MATO GROSSO DO SUL
SILVIO FERRAZ UNIVERSITY OF SÃO PAULO

Time became a key-concept for philosophy in the twentieth century, mainly after Einstein's propositions on Special Relativity, and the effects of this paradigm shift are well known in all artistic manifestations. However, in music—maybe the art more dependent on time—a myriad of definitions did turn this idea not only into a rich element for musical discourse but also into a conceptual battlefield in discourses about music. Unfortunately, there was an issue for this struggle between theoretical ideas and musical composition that always insisted in striking the debate: the performance. The world of ideas has not much interest in the carnality of musical performance, and for this reason, it was constantly put aside in all that vivid discussion, especially if taken from the standpoint of performers. Thus, this is the aim of this short reflection: to bring performers as actors into the debate, listening to their experience *in* time and *of* time in the momentum of performance. For this, the Augustinian link between Time and Memory is taken as a bottom line for the discussion. In understanding music as a kind of discourse, another important conceptual device will be claimed for this reflection, that is Rhetoric. Along with Rhetoric comes the Aristotelian concept of discursive time not following the Latin dichotomy between Time and Eternity, but after the third category from the Greeks, *kairós*, a concept closer to the definition defended here. The first part of this reflection, therefore, recollects concepts from the Aristotelian and Augustinian approaches on time and discourse, and concludes with a review of the main

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definitions of time by composers in the twentieth century. The second part reviews three theoretical approaches of musical form as process (those of Edward Cone, Fritz Noske and Boris Asafiev), more adequate to the experience of time in performance. This review, thus, attempts to formulate a device for describing this experience in musical analysis, i.e., in the discourse about music. After the conceptual and the methodological reviews, a third section comprises the embodiment of those discussions into practice. The piece of music chosen as the object of analysis and reflection is the *Cello Sonata*, written by German composer Bernd Alois Zimmermann at the same time of his influential text *Intervall und Zeit*, and will be taken as reference for the discussion too. In bringing the performer back as a fundamental instance for music, this article aims, finally, to make a point on the convergence of past, present and future that happens on the stage, where memory relates the last line to the next while performing in the present, which leads to the concept of an *extended present*. This is the core of the argument: that living the performance of a piece of music is the way to have access to its meaning and, therefore, to its singularity of time. For this reason, we suggest that the reader, for engaging in the journey of this article properly, watches the performance of Zimmermann's Sonata by this author (William Teixeira) on YouTube:

Watch and listen to Teixeira play Zimmermann's sonata
🎧 https://youtu.be/9oelej9llQ0?t=137

1. From the sounds of the house to the images of the palace

"In the beginning." The founding myth, where, in an incipient way, Augustine believed, space and matter were instituted (Augustine 2016 [c.400], 11:3, 5). Both created in the primordial temple, the beginning. This is therefore the first creation, the beginning: the time. In fact, the adverbial phrase "in the beginning" is in ancient Hebrew a single term, *bereshít* (בראשית), the first word of the Holy Scriptures. The first letter of them, *bet* (ב), has the same pronunciation of the term for "house," which is the reason why, along with the letter format itself, the rabbis understood time in the Midrash as the "house of creation" (Ogren 2016, 129).

In the house of all the things, cosmos finds its existence. In the same way, music happens in time as the whole world, but somehow it seems to indwell more intensively in that dimension of reality than the rest of creation. If, together with Augustine, it seems necessary to recognize the impossibility of full access to the understanding of what this house is, then it is possible to reach at least its vestibules, or, as he preferred, its palace, the Palace of Memory (Augustine 2016, 10:8, 12).

Time and Memory are binomials of the same reality, concepts separated by perspective rather than by their place in existence. If the former seems to deal more with physical realities, and the latter with cognitive ones, it may be that they deal only with different levels of duration of the movements of reality, as Henri Bergson would suggest.[1] In any case, to such concepts are restricted human action and interpretation, so it is not possible to exempt us from an examination of their nature, or, minimally, from the possibility of knowledge of and relationship with this nature.

Classical rhetoric was born in the philosophical context of Ancient Greece, which understood Time as three different meanings: *aeon*, the time of eternity, or the timelessness; *chronos*, the quantitative and metric time; *kairós*, the qualitative and momentary time. The important thing is that it was exactly on the third concept of time, the *kairós*, that Aristotle situated rhetorical discourse, especially in his discussion on the stage of formal elaboration, the *dispositio*. In the fourth part of the rhetoric, memory receives the place of the *memoratio*, the proper space for its investigation and practice within the discursive act. Although in its first three parts rhetoric already deals with the question of the time and place of discourse with regard to its conception and structuring (*inventio*, *dispositio,* and *elocutio*), its last two parts are dedicated to the performance of discourse (*memoratio* and *actio*). This dimension receives more attention and importance.

In the systematic way the Latins worked rhetoric, the *memoratio* appears not only as a study of argumentative processes but also as an art of oratory. However, even in its development in Ancient Greece, memory was an aspect present in the discussions about the means of persuasion, especially, as Cicero and Quintilian credited, for Simonides, the poet inventor of the art of memorizing things and words. The earliest fragment about memory as a discursive ability is his *Dialexeis*, from 400 BCE, which already seems to contain the sum of what the Latins would sophisticate and systematize, as follows:

> A great and beautiful invention is memory, always useful both for learning and for life.
> This is the first thing: if you pay attention (direct your mind), the judgment will better perceive the things going through it (the mind).
> Secondly, repeat again what you hear; for by often hearing and saying the same things, what you have learned comes complete into your memory.
> Thirdly, what you hear, place on what you know. For example, Χρύσιππος (Chrysippus) is to be remembered; we place it on χρυσό (gold) and Ἵππος (horse).
> Another example: we place πυγολαμπίδα (glow-worm) on πυρ (fire) and λάμψη (shine).
> So much for names.
> For things (do) thus: for courage (place it) on Mars and Achilles; for metal-working, on Vulcan; for cowardice, on Epeus.
> (Simonides cited in Yates 1966, 29–30)

These early sayings from Greek wisdom seem to foretell not only the seeds of what would constitute the art of memory in Latin rhetoric, but even the descriptive knowledge that neuroscience would attain in the Twentieth century about the cognitive functioning of neural mechanisms in their different levels of retention, especially in the practice of memorized content (Lent 2002, 648). Memorization thus begins to gain the airs of technique, from its process of association with images that would entail words and things to be remembered, resulting in its consideration by the anonymous author of the treatise destined for Herenius as "the treasure of things invented" (Cicero [pseudo] [c. 80 BCE] 1953, 83).

This artificial memory, as it was distinguished from natural memory, was not a mere set of mnemonic mechanisms that aimed to record a discourse already conceived, but part of the

process of invention itself; new images and places would reconfigure the existing discourse. Moreover, these processes dealt much more with places and keywords than with the syntactic fullness of a discourse, acting as a guide to improvisation and not as a rule for enunciation. Thus, the practice of composition by memory outside the written medium was emphasized mainly in the Middle Ages, creating discourses from a previous set of structures already known, reshaping them and resetting them. In fact, rhetorical topics appear more like a reunion of these places (from the Greek *topoi*) than as a group of structures of purely referential meaning (Crowley and Hahwee 2004, 318).

This preamble through Ancient rhetoric helps make the point that the same practice could be easily transposed to the musical discourse. In music, *memoratio* also assumed this double role, both as a mnemonic device and as a standard of musical invention. Even in Ancient Greece, such a relationship was similar. Just remember that the Muses, from which comes the term "music," are daughters of Zeus with Mnemosyne, the titanid daughter of Uranus and Gaia, the personification of Memory—music: daughter of god with memory (Gusmão 2016, 10).

Aristotle advances an inquiry on memory in his *Parva naturalia*, understanding it as the capacity to form *phantasmatos*, that is to say, images, mainly from other previous images. But it is not enough to form such images, for it is also necessary to attribute a temporal duration to this image, knowing its before and after, that is, temporally relating it to reality. Not that this relationship is metric, but, rather, that it can relate proportionally the farthest from the nearest, even if one does not know how far one image is from the other. The philosopher gives the example of two triangles (Fig. 1), where both have a vertex A in common. Taking A for granted, one knows that the ratio of A:E is equal to E:B, and that the same reasoning occurs in the second triangle, also allowing the passage from one to the other. To this reasoning, Aristotle gives the name of motion (*kinesis*), this effort to connect two images from a point and to connect such image and the present (Gusmão 2016, 18).

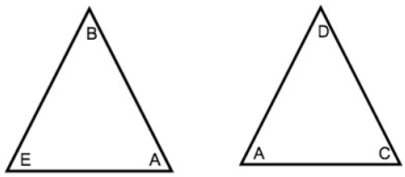

Fig. 1: Representation of Aristotle's proposal of movement from memory

Gusmão (2016) points to an important consequence of this Aristotelian thought for music coming from the contribution of his disciple Aristoxenus, who takes the idea of *phantasmatos* not only for the visual image but also for the *melos*, "the image of sensation" (της αἰσθεσεως φαντασιαν) (Gusmão 2016, 19). From this point, Aristoxenus continues his development already known within Greek musical theory, but it is helpful to remember that the term *melos* does not have a meaning only associated with the melodic aspect of the music; it first designates a part of a body. The *melos* are limbs, just like the *harmos* are articulatory joints. Therefore, it is not necessary

to suggest that the Aristotelian idea of the forces of memory acting in the apprehension of a movement depends, in music, on the existence of melodic structures, but simply on the existence of a part of the music, whether they are sonorities or musical gestures.

During the Middle Ages, *memoratio* was practiced in music in a manner equivalent to verbal discourse. Its mnemonic technique was present as a means of recording and re-creating the music from the succession of places that certain musical clauses inhabit. Perhaps the practice reached its technical apex in the music of the School of Notre Dame in the eleventh and twelfth centuries. This is, however, ironical, because if one remembers the great names of Leonin and Perotin, this was more due to the failures of the students in their process of memorization than by a will or need of them of writing their own music (Berger 2005). Avoiding Eurocentrism, however, it is important to relate the polyphonic creation to dozens of voices of the French school, performed almost improvisationally from the inventive-mnemonic places, to that made by the African people Banda Linda, as researched by the ethnomusicologist Simha Aron in the last century, given its similar complexity and its constitutive normative aspects driven by mnemonic and gestural records.

Even the famous Guidonian hand, a gestural device for recording notes, rising in the Middle Ages for storing the musical pitches and their organization, like so many other hand models, served as support for recording music information as clefs or rules of prosody, just as today one uses the hand to remember how many days are contained by each month of the year (Berger 1981). In the Renaissance, the access to printing and paper minimized the role of memory, and caused the development of musical writing; for this reason, music became more dependent on material support like the musical score (Lorenzetti 2016). Even so, it was expected that the diminution patterns of the many treatises on the subject would be recorded by memory, allowing its application in the most different musical situations, as was the case in the Baroque in relation to ornamentation.

In Romanticism, musical writing emancipated itself as the creative instance par excellence, being the simulacrum of the inspired genius, while simultaneously the performer tried to take for himself this post of inspired genius who magically created the musical discourse he performed. If Beethoven once used the score to play his own sonatas, a few years later Clara Wieck Schumann and Franz Liszt would give it up to instill a new dimension in musical performance by playing music written by another without the other's writing. The presence of the composer in the score gives way to the interpretation of this score, as memorized by the performer, thus creating a practice that would become part of the musical tradition.

There is no denying, of course, that the performance by memory as preconized by musicians in Romanticism has a great effect on the audience, and for that reason, it has remarkable oratorical effectiveness. However, it is possible to question which type of ethics belongs to this set of effects produced and eventually intended by this type of performance. Most of the studies, when in favor of such a practice, argue that memorization frees the performer and allows one to focus on other aspects of performance (Williamon 2002). The question, however, is from what does it set the

performer free? It is clear that a sight-reading is not considered here as an option, but, rather, a stage of preparation that gives to the performer an adequate knowledge of the musical discourse he or she will perform, acknowledging the immense amount of prescriptions that the mean brings.

Thus, Time and Memory reach the Twentieth century as the two faces of a single and vital issue for music. Musical discourse is an eminently temporal discursive stream and, for this reason, triggers various levels of memory in its action. On the one hand, one can notice today in musical performance a disrepute of memorization as a necessary practice, due to the amplification of the recognition of its limitations.[2] On the other hand, the question of time and the possibility of memory are more present than ever in the conception of Contemporary Music,[3] and for this reason it is necessary to investigate its limits and definitions in order to understand how memory acts in the temporality of the performance beyond the mere memorization.

2. The synthesis of times in musical performance

This digression through the Western history of the concept of time may be wearying but it is absolutely necessary to demonstrate that this topic is not a complete novelty and that our approach to time after musical performance is grounded on several parallel notions. However, performers are not usually the first to be listened to on this matter. If firstly we heard from philosophers, secondly are the composers, the ones not only to craft time musically but also to think on the subject conceptually, as follows.

In the twentieth century, people witnessed the human conquest of space in as many spheres as possible, from the consolidation of geopolitical structures to celestial explorations, to the consummation and overcoming of classical mechanics in the new quantum era. The conquest of space, which had once moved thousands to the discovery of continents and territories, gave rise to a greater desire, the conquest of time. People still attempted to achieve the freedom to live where they wanted, but could people achieve equal liberation to live when they wanted and for how long? If Physics has taken important steps towards understanding and controlling matter and space, its postulates about time have further demonstrated how far man is in being able to say anything about it, even less to control it or operate it. Heavens and earth have been recreated, but the beginning remains.

Space was also the great musical achievement of the early Twentieth century, especially when Anton Webern proposed the domain of musical space by means of the parts (*Sätze*) of music, recognizing that the synthesis of parts results in the expansion of space and that "only the union of parts can completely express the [*musical*] idea completely" (Webern 1963, 19). The space of the musical score itself thereby became a territory, and for that reason it required its own policy that prevented parts from destroying themselves and helped them build into a gathered whole.

If Serial Music seems to be the consummation of understanding about the space of musical pitches and textures, in a similar way to Physics it exposes an even greater difficulty, which is to understand and operate musical time. It was in the face of this situation that French composer Olivier Messiaen

began to coin his infamous understanding of musical time from the Thomist categories of Time and Eternity, articulated alongside the Bergsonian concept of duration, thereby starting, if not a space race, a time race for the political domain of this dimension of music, albeit conceptually. By way of contextualization we can briefly list (Tab. 1) the main propositions on musical time in the second half of the twentieth century, mostly influenced to a greater or lesser extent by Messiaen's postulates:

Key concepts of time in 20th Century music			
Authorship	**Theoretical basis**	**Concept**	**Generic description**
Unknown; concepts adopted in the field of electroacoustic music	Radio diffusion from the late Nineteenth century (Barkati, 2012, 8)	Real time	Time relative to the musical practice performed simultaneously to its sound emission (e.g., performance, improvisation, real-time processing)
		Deferred time	Time relative to the musical practice performed extemporaneously to its sonorous emission (e.g., composition, analysis, tape music)
Pierre Boulez (1963)	Louis Rougier; Gisèle Brelet	Smooth time (statistical, progressive or static)	Continuous temporal flow
		Striated time (straight or curved)	Time flow cut by pulses
Iannis Xenakis (1962, 1967, 1988)	Heraclitus; Parmenides; Stochastics	Out-of-time	Time of musical abstractions *a priori* (eg scales, modes, formal structures)
		Temporal	Time of actualization of music in the sound emission (e.g. performance, sound diffusion)
		In-time	Time of the musical structure attributed to an energetic flow (e.g. series, melodies)
		"Irreversible Time" (1988)	Time in constant fragmentation and state of disappearance (e.g. micro-modulation processes)
Gerard Grisey (1980)	Abraham Moles (acoustic engineering)	Skeleton of time	Musical time of the elemental rhythmic structure of a piece
		Flesh of time	Musical time of the sound material of a piece
		Skin of time	Perceived musical time in listening to a piece
Karlheinz Stockhausen (1955; 1957)	Webern	Experiential time	A sense of time similar to lived time as opposed to real time; idea of time experienced by the listener from different levels of material density
B.A. Zimmermann (1957)	Ezra Pound; Husserl; Heidegger	Effective time	Duration of the interval between two bodies, not only within the pitches but within its acoustic and gestural aspects
		Spherical time	A Global time that considers the human experience in history as a unity

Table 1: Glossary of the main concepts of musical time in the second half of the 20th century

Obviously, the risk of superficiality is assumed when presenting such a brief panorama of a profound discussion, but this temerity is incurred only for giving a unifying outlook to perspectives often studied individually. Many other composers worked on the problem of time in their music,

in the twentieth century, but this list contains those who also elaborated on the conceptual dimensions of this issue. Moreover, existing within their work as composers, a large part of these discussions were born within the scope of musical composition and therefore dealt with a reading of time that promoted not only comprehension but the possibility of writing that time. In this way, the interest of the concepts differs from the objective investigated here; namely, to understand not only how time is perceived in listening or how it is possible to do it in writing, but *how the act of performance participates in the listener's experience and understanding of time*.

This seems to be a difference eminently perspectival, but it has important consequences to be pointed out because although the concepts listed above offer themselves different points of view about musical time, most of them do not care about the situation of the performer or with the techno-aesthetics[4] of musical discourse. The place of the performer cannot be simply in real time, because the performance brings within its momentum a series of other information previously studied (memory) and that comes consciously to the surface from the affectation of the score in the movements of the one that plays. Moreover, the performer is totally involved in a physical action and at the same time has to relate to sounds that have just been produced, already anticipating movements that will be done.

At the same time, the physical energy put into performance creates an expense on each long note, each bow change, each breath; there is no purely smooth time for the one who performs music for the simple reason that it deals with information already prescribed (and prewritten), which he must organize into sets of actions that will effectively turn these actions into a sound that may sound like a smooth time-space. And even the pulse of performance is perhaps not so much that of the musical pulse, but that of every new fingering or change of position that scores and guides the arrow of time in performance.

In Xenakis, this reality is somehow contemplated in his concept of *temporal* musical time; however, it is a time that the composer does not develop in his reading and which, as for example in the definition of *out-of-time*, proposes more compositional strategies tilted toward the mathematical bias. Even the idea of an irreversible time seems to have something reversible for the performer who either repeats a structure in his practice routine or who, as said, is anticipating the next movement while producing a sound that related to the previous one.

Grisey, likewise, is still concerned with the division between subject and object, understanding that there is little of the skin of time that can be controlled, since it is of the subjective order of perception, leaving the flesh and the skeleton to be worked objectively in the composition. It may be said that the skeleton of time is largely the type of time in which performance takes place, not that it does not acquire its flesh, but because it is the points of reference used by the performer in his planning order, either be it the time of the metronome studied, or the inner groups of figures and gestures that, however grouped they may be in a larger idea, still persist in being themselves as individual characters of movement and sound, i.e., as individual bones.

Stockhausen is perhaps the one who most ignores the performer; indeed, it was the composer's intention at that point since, from the electronic experience, he proposed rhythmic micro-divisions

on a scale humanly impracticable. It is curious that this concept is close to the definition of Zimmermann, geographically and historically, but considers different directions of the production of musical time; Stockhausen ignored an instance that for Zimmermann was fundamental, which was the physical set of actions put into practice in sound production. And it also poses in an antagonistic way to the positive consideration that the second concept of Zimmermann has on the historical relation integrated with the musical tradition, since Stockhausen proposes a radical overcoming of the past.

For a performer who puts on the same music stand Frescobaldi, Bach, and Cage, history really has an unusual aspect of simultaneity; at once, the performer brings into existence discourses from distinct temporal origins, but which enter actual time together. As part of the bitemporal ontology of music, it really does not seem to make sense for the performer to ponder a musical time that does not consider to some extent the synchrony (and synchronicity) that the entire repertoire has. Perhaps this makes performance an inevitably conservative musical entity, in which composition seeks progress and rupture. However, this tension is precisely what keeps music as music, in its movement to move forward in new ways, without giving up what has already been, since, inevitably, this is also the human way of making its existence ever new, while carrying marks of the previous ways.

With the noted conceptual gap of a musical time for performance, it always seems necessary to return to the one from which this discussion always begins. Augustine, when inquiring on the possibility of memory in the face of the volatility of time, begins to understand that the present is the time in which both past and future find their synthesis. Memory is the possibility of the past to make itself present, albeit as a past, but a past "impelled" by the future that attracted it. Now, even eternity, finally, will be this present, but a present without a past or future, in a constant state of fullness. It seems to be in the present, therefore, that lies the key to understanding how the past and the future are present in musical performance (Augustine 2016, 11:15).

This idea seems to be difficult to conceive because music thought is, in general, used to being structured in the metaphor of space, within the form of the score, where it is possible to see succession as an overlapping of parts. However, from the standpoint of performance, perhaps a recapitulation in the Tonic key may be as new as any new section. And it may be suggested that even listening can behave in a similar way. Edward Cone (1985) proposes something similar in stating that musical performance in its formative attribute is essentially rhythmic, understanding that "It is not, [as] the conventional analysis would have it, thematic, nor, *pace* Schenker, harmonic. Both of these aspects are important, but rhythm is basic" (149). Performance is a constant agency of gestures made in time that group sets of distinct pitches that only enter reality when attacked in time. Hence musical time has a transient attribute as the sound envelope itself in its identity. This is why Cone proposes that the performer is challenged to make real and sonorous the temporal structure proposed by the composer.

Fritz Noske (1976) recalls a question of definition: when music is no longer understood as a type of action, leading to a conception of music as an object, it becomes as every object, having

form. Actions have categories of valuation and structuring but are hardly visible and valuable forms. Thus, musical form is born, by definition, from a music that is not action and, therefore, little or nothing has to do with performance. Noske then presents his thesis, which can be easily transposed from the compositional process to the interpretative process:

> Here we arrive at the vital point. The form of the completed musical work tells us very little about the process of composing. The indisputable fact that music does not really exist unless it is produced in sound implies "its character of being always generative". Music is by definition a present participle. What we hear, what we sing, or what we play is not the form[ed] form, or the *form formata* , but the form forming itself, or the *form formans*. (Noske 1976, 45)

Understanding the time of performance requires, therefore, overcoming a spatial and parametric description of music, assuming it as the *embodiment of movements in time*. The sound in motion is music taking form and therefore the form of performance. Noske proposes three basic and self-explanatory concepts for understanding these forms of movements: *acceleration*, *retardation,* and *stabilization* (Noske 1976, 47). From those basic movements the experience of time expands, but more than that, time reconfigures itself in reality, when one considers the unity of reality.

This proposal has some radical consequences, and not all of them have adequate space to be dealt with here, such as those of a more sociocultural nature. Noske himself suggests that the disobjetification of music is a painful process where much of what the musician brings as formation in the last centuries has to be re-evaluated. He considers, in his analysis of medieval music, that the music of the Twentieth century has the merit of retrieving the notion of music as an activity that structures time and that, as a movement, deals more with time than with space and more with the ethics than with the etiquette of the concert hall.

To consider music as action involves withdrawing it from the merely notational and even from the sonorous realm, and dealing with the human condition which, as such, is integral in its physical and mental faculties. This point is implicit in Noske's proposition but becomes even more evident in the work of the Russian musicologist Boris Asafiev in his influential book *Musical Form as a Process* (1930). Although Asafiev's theory agrees with the point already made here about the time of the performance—a synthesis of past and future in the present—it is necessary to point out that his concept of *musical movement* takes into account more the movement of the musical parts than of the musical action itself (Asafiev cited in Tull 1977).

After the initial question, Asafiev's proposition contributes greatly to the viability of a reading of musical time from the point of view of the performance time defended here as the *extended present*. The Russian musicologist proposes a general theory based on the premise that the musical form is the perception of the musical intonations by the audience, which in his theory of Marxist bias is society itself. Established musical forms are nothing more than intonation patterns sedimented socially by the mechanism of repetition. An idea proposed by Asafiev that helps in describing the temporality of musical performance is to speak of *formation*[5] instead of *form,* thus understanding music as a process of the whole coming to be or a structural becoming. It is an

alagmatic process as proposed by Gilbert Simondon, where the mass of the brick is released gradually, taking shape in time.

The intonations are a kind of energetical transduction, which builds on the initial energy of the composer's writing, where this energy is in a potential state until its actualization into kinetic energy in performance, resulting in the energy of sound. This energy is the force involved in each connection, between either sounds, notes or harmonics, but all this potential energy is only actualized after an *initial impulse*, that is, the friction of the bow, the blowing on the mouthpiece or the pressing of the key. This impulse relates to another concept of Cone's, that of "accent of weight," which refers to points of articulation of the performance time, where movements—and we can use the three Noske categories here—receive a new discharge of energy. For Asafiev, the intonations are organized in three basic moments: *impulse*, *movement,* and *ending*. Within the idea of formation, an impulse is not only the initial impulse but can last for seconds, or even minutes, when a whole stream is made in order to accumulate enough energy to achieve a certain time; this may be a slow opening of a first movement or a *levare* measure; the point is, there are seconds and more "anachronistic" seconds, leading to a vanishing point. Taking the concept of intonation in its ultimate degree, Asafiev concludes that it is the basic manifestation of human consciousness, whether as an instrumental sound stream or as a verbal sonorous flow or even in the sum of both in music.

After the propositions of Cone, Noske, and Asafiev, there seems to be enough conceptual repertoire to be undertaken in an attempt to read the applied music time from the performance data, where the performer actually stands as the "lord of time." Viability exists not only in the philosophical and musicological fields but also in the understanding of the cognitive processes involved in performance, which have been demonstrated to be of an order not only of long and short-term memories but also of the peripheral neural complex, which recruits areas of the order of planning as well.[6]

This is, then, our point: That musical performance thus demands another sense of time, an *extended present* where the whole being is applied in the actualization of a musical action between movement and sound and, at the same time, connects these movements and sounds to those just produced, already anticipating and planning the next technical step, listening internally to the next time or the next attack. But of course, even that description is out-of-time. All these movements happen simultaneously, like an energy that rationalization cannot contain. It is indeed a dilation of the present that promotes the synthesis of past and future in the performative act. Hours of practice, old affections, technical traditions: all joining the image of the next movement, the energy expenditure for the next sound production.

The performer thus operates if not a spatial domain, then, minimally, the control of time. He or she becomes master of that temporal territory, not only shaping experience but time itself. Territorialization overcomes the spatial and controls the time of the interval, but also that of the "single sphere of history," to use the categories of B. A. Zimmermann. The performance is the musical action that triggers the reterritorialization of that territory already demarcated by writing

and that is deterritorialized by the time lapse, or even by the communicative lapse between composer and performer, and between performer and audience. Finally, if the performer is the lord of time, he is a different type of landlord, serving the one with whom an alliance has been established—musical discourse—even though not receiving anything in return but understanding the responsibility to the call that, on the contrary, would only echo empty in the galleries of the palace.

3. The performance of time: a formative reading

"... there is time to every purpose under the heaven." Singular purposes demand singular times. As demonstrated by the three musicological references we have seen, musical time, when analysed after the performative data, is a constant agency of the present, creating different densities of the living moment. As the several concepts of time coined by composers also prove, there are many interpretations of whatever entity or dimension we know as "time," but the fact is that they all produce their own mark through the reality of musical time. There is time for all musical times under the heaven. However, few musicologists or composers have thought in their propositions about the possibility that musical ethics is less a matter of right and wrong and more a relation of either-or. There is time for all musical times to be made into music because music carries in itself a catholic, that is universal, attribute: people make music. From this anthropological universal, it is natural that the plural condition of humanity promotes diversity of interpretation from a given reality. Time is a reality, sometimes measurable, sometimes imponderable, but "To every thing there is a season, and a time to every purpose under the heaven."

The second part of the first verse of the third chapter of the Biblical book of Ecclesiastes is precisely the subtitle of the solo cello Sonata written by Bernd Alois Zimmermann in 1960, in its Latin rendering *"... et suis spatiis transeunt universa sub caelo."* The verse opens a new section of the book known as the "Poem of Time," a set of eight parallel verses where the idea of a certain time is always contrasted with another concerning an uncertain time (Bartholomew 2009). The text deals with confidence in time even in the midst of temporal uncertainties. How can a farmer, for example, in the organic sense of the profession, rely on harvest time? The farmer does not know the time, nor the day, but safeguards the confidence that there will be a harvest. This kind of certainty seems reasonably uncertain to modern ears, which are disappointed by minutes of delay, since it refers to a cyclical conception of time, typical of the East from which the biblical text comes. This relationship is further clarified by looking at the translation made by the rabbis of the Septuagint when they translated the original Hebrew into Greek as "τοῖς πᾶσιν χρόνος καὶ καιρὸς τῷ παντὶ πράγματι ὑπὸ τὸν οὐρανόν": everything has its *chronos* and there are *kairós* for all things under the heaven.

If it is difficult to think of a life guided by the mere certainty of time without being able to control or measure it. Who would dare to imagine a piece of music based on the certainty of time but which ignores the metrification of this time? For it is precisely this reality, or that duality, that treats Zimmermann's sonata in his attempt to translate into music a question that perhaps other kinds

of discourse would not deal with. This duality can lead to two attitudes towards such antinomy: on the one hand rejoicing in certainty, on the other the despair of uncertainty. Zimmermann personally lived for the second reading, a very present image in his music, where six pieces bring excerpts from the same biblical book as the theme but that ultimately lead to the deep depression that culminate in his tragic suicide.

People make music while there is life because life is only in time. Thus, from the gravitational waves to the position shift on the musical instrument, vital energy only finds its wholeness in the affection embodied in the *logos*, in itself and in the other. Zimmermann proposes in the discourse of his sonata a conflict between the times that in the end are one, a time linked to the energetic micro-articulations and another one that concerns the history of human deeds.

This proposition was born in a more consolidated way in his influential text *Interval und Zeit* (Interval and Time), written in 1957. The article is itself the fruit of a conflicting dialogue with Stockhausen, who, around the same years, developed his own reading of musical time, the result of which was quite antagonistic to his. For Zimmermann, the basic unit of time was not in the note and its duration, as Stockhausen would suggest in his theory of Time Unity, but in the connection between notes and sounds, in the *interval*. The interval is the energy of the sound-musical becoming applied in the connection to the next actualization, and so the time itself is actualized. The interval assumes two typologies: *successive* in horizontal (melodic) musical settings and *simultaneous* in vertical (harmonic) musical settings, resulting both in the basic temporal math of the music, or its fundamental form (*Grund-form*). If musical time finds its becoming in the interval, both successive and simultaneous, it denotes an elasticity of time where in reality what happens is a dilation of the present. Zimmermann joins the Augustinian-sounding concept coined by poet Ezra Pound (1885–1972) as *real time (Wirkliche Zeit),* the idea of a time effected in a continuous present, where what separates the past from the future are agency levels and not the reality of actions. Thus, from Bach to Zimmermann the distance resides in distinct temporal agencies that were made in time in the same single mesh, or in the same *sphere* of time.

Music remains with its two basic units: sound and movement; and musical actions have only the both as material means to weave time. Between Palestrina, the Beatles, or the Bororo ethnicity, the distance lies in the way each agency crafts musical materials in their own fabric of reality, which is finally integrated into the same everlasting sphere of time, which had a beginning, but not an end. In this sense, musical actions modulate time through their "*effective temporal durations*" (Zimmermann 1957), not as a chronometric duration, but as the energy of the musical movement reaching its becoming in Time.

Although Zimmermann did not aim at the "monopoly on the theme of 'Time'" (Zimmermann, 1958), his proposition is undoubtedly the one that proposes a more comprehensive understanding of musical time with the movement from composition to performance. For this reason, his discourse fully converses with the performer, constituting a direct relation of performative affectations and, consequently, of a performance time aligned with the time prescribed by the composer, which is

especially notable in his cello sonata where the concept of Time is explicitly the great creative question.

The Sonata has five main sections, each consisting of disconnected and independent systems, as described in the following list:

Movement	Number of systems
Rappresentazione	8
Phase	12
Tropi	12
Spazi	8
Versetto	6

Table 2: List of sections of the Zimmermann Sonata *with the respective number of systems*

Each system is juxtaposed graphically next to the other without any causality between the figurative structures, and the performer must execute them as individual entities, separating each new idea with a pause *ad libitum*, according to Zimmermann's own notes. Perhaps the most notable and important proposal for this analysis is Zimmermann's annotation where he instructs the performer to execute the systems without any numerical order, changing the order between the systems as random execution boxes (Ingenhütt 1983, 11). Although this proposal has been abandoned in the later manuscripts, this is undoubtedly a piece of fundamental information to validate the claim that there is no structural causality within the Sonata's musical disposition. Even so, Zimmermann maintains an almost impromptu timeline, one of the dimensions he most admired in American jazz in its ability to flexibly actualize musical time.

Besides reading the temporal effectiveness of the musical gesture,[7] it is possible to suggest a reading of the time dilations not only in successive intervals of the same written duration but also from the dilations written by the composer in structures. In the second section, *Phase*, there is a succession of gestures whose own written duration already suggests these simultaneous flows of dilations (Fig. 2, next page):

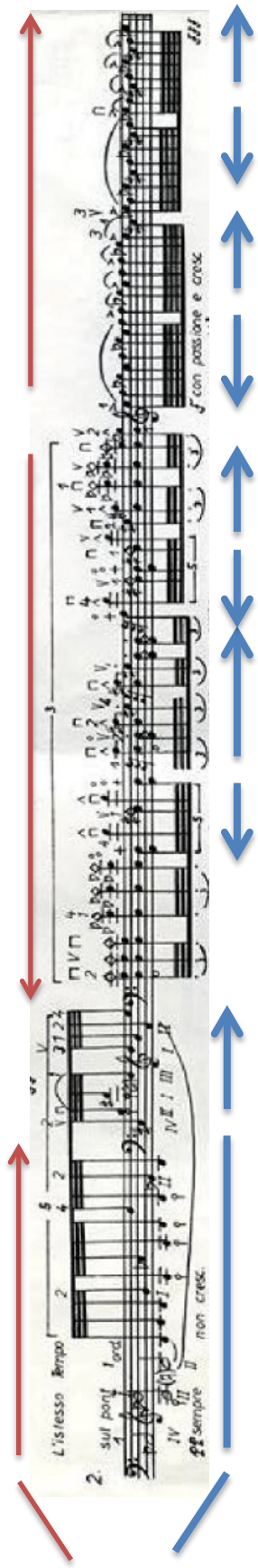

Fig. 2: Zimmermnann, Sonata, *p. 2, s. 2. Upper lines (red): gestural-temporal macro-articulation; Bottom lines (blue): gestural-temporal micro-articulation. With the indication of the movements of Noske, where - = stabilization, → = acceleration and ← = retardation*

What occurs in the time of performance within this system is primarily a stable A-flat that increases the dilation of time when it is succeeded by the simultaneous interval between the A-natural and the B-flat. Afterward begins the profusion of gestures in simultaneous joints here distinguished in micro and macro, where on the one hand there is a great division of the pulse and, at the same time, species of grooves in these macro-divisions that undulate the micro-articulation of the time in small movements often opposite between levels. When finally there is stability, with the groups of thirty-second notes, actually there are changes of impulses through the bow, granting a kind of accelerating motor. This type of overlapping is very common throughout the sections of the sonata, but it may be worth mentioning a case in the manuscript where Zimmermann points out the temporal elasticity promoted by the succession, which at the same time is stable in its durations, produces retardations and accelerations in its exchange of attack modes (Fig. 3):

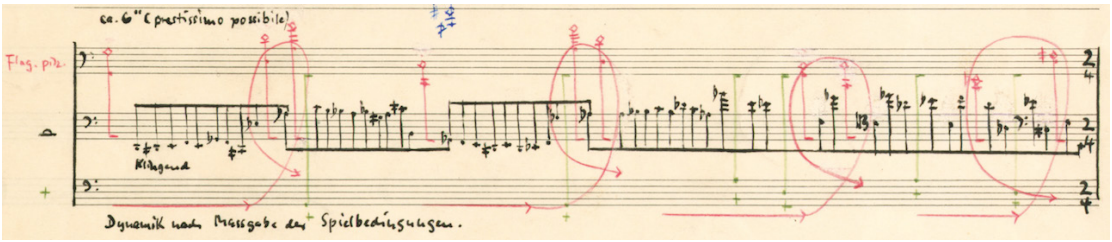

Fig. 3: Zimmermann, Sonata, *p. 4, s. 4, upper line (red): natural harmonic in pizzicato; intermediate line (black): notes produced only by the impact of the left hand fingers on tapping; bottom row (green): left hand pizzicati. (Source: Composer's manuscript/Akademie der Künste Berlin)*

Perhaps the most striking example of temporal effectiveness in the performance dilation of time where the future touches the present through its anticipations is in an excerpt from the Phase section, wherein its ninth system (Fig. 4) there is only one B-flat, played by several different modes. The interesting thing is that even though the pitch is the same, the editor outlines a path, perhaps the best possible, to perform the excerpt, where everything is an anticipation for the next system. This is because the first B-flat is made with the finger 3 on the A-string, the most easily achievable because of its proximity to the natural harmonic. Then finger 3 is replaced by the thumb, which in turn makes it possible to access the same B-flat with the third finger on the D-string, which will also be replaced by the thumb. Such large numbers of movements would seem futile, but, in fact, already anticipate the next system in its demands. In system 10 (Fig. 5), the fact that the thumb is already in the B-flat of the D-string will allow safe access to the D-above that B-flat and the positioning of the thumb in the same position, but in the G-string. This is an evident example of what is said about the temporality of performance, where past and future are embedded in the present.

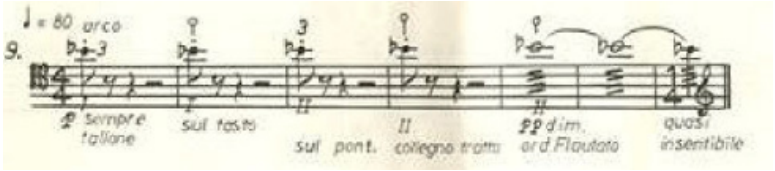

Fig. 4: Zimmermann, Sonata, *p. 3, s. 9*

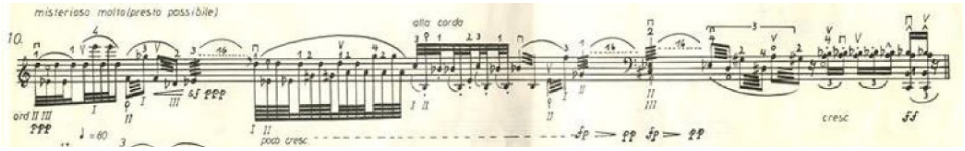

Fig. 5: Zimmermann, Sonata, *p. 3, s. 10.*

By mean of these examples, the mechanisms of time modulation that Zimmermann applies in his writing are somewhat more clear, demonstrating that his conception of time goes far beyond mere theoretical speculation, unfolding into an absolutely sophisticated practice. At the same time, it is fundamental to understand that these levels of time articulation modulate discourse in its totality at even more complex levels than the simultaneity of the system. The same section or movement has several of these overlaps that create, in turn, a succession of these dilations. It would be possible to go further by listing a level still higher where the reading counts the affectation in time between the sections, resulting in a large arc, but this relation seems to inhabit a perceptible plane of a hard application within the performative process. Thus, the way in which Zimmermann deals with the antinomy of the certain time against an uncertain time becomes more and more detectable, as does the ways he modulates the performer through his technical writing of the times. Obviously, the result is a piece of extreme complexity, demanding a great opening of the performer to play all layers as written, a process of slow and gradual development. Fortunately, there is time for every purpose under heaven.

4. The end of time

Much has been said about time, and yet it seems to remain indecipherable as if it were alien to human lucubrations about its existence or functioning. This durability mesh continues in weaving, in a progressive spin where the loom is the present in its energy and intensity. However, among so many temporal and time-making actions, music remains in place of honor, perhaps because it is something closer to an art that makes time sonorous. The fact is that if there is really a time, perhaps there is no more appropriate instance for one to know it than music, especially if one performs it.

Memory, in turn, is the return path to Time, connecting and reconnecting past to present. Even in front of a score, the concert music performer is engaged in an intense activity of retrieving memories of distinct levels and at the same time planning and anticipating what will come in a state of an extended present. The imponderable seems to be on another level in performance, not so much as who does not know what will come, but as the one who does not know *how* it will come.

Perhaps Paul Ricoeur is right in suggesting a certain attribute of monstration to artistic making, an overcoming of historical time that bestows on actions like music an everlasting state, like the angels. As a piece of sempiternal music may be known, but only in what it chooses to show itself, perhaps it reveas distinct faces in different times, while always ministering the affections inscribed therein (Ricoeur 1996, 2).

Facing this situation, one only has to wait with Messiaen for the coming of the Angel of the Apocalypse, to whom he dedicated his *Quartet to the end of time*, who will finally pronounce that "there shall be no more time." This quote, which is found in chapter ten, verse six of the Book of Revelation, literally says in Greek such words, although in most translations "time" appears as "delay." Perhaps because of theological fears of imagining a time without time, since only God could inhabit Eternity and be Eternal, translations choose to interpret the text as "there will be no more delay," but it is not what the text says. The original states ὅτι χρόνος οὐκέτι ἔσται, or "there will be no more chronos." Probably the time of the escathon is not, in fact, eternal but neither does it need to be immanentized to be understood. It can be a constant state of now, the fullness of the present that, full of it, does not see another time than that. After that, all the mentions of "time" in Revelation refer to it as *kairós*, the time full of meaning, where the eternal touches the temporal; the almost nothing that becomes in almost everything, having in the music here a glimpse of the world of the end of the times, where time has no end.

Notes

[1] Bergson is a fundamental philosophical reference for the perspective held by the composer Olivier Messiaen, as it is clear in his writings. See Messiaen (1944).

[2] As a journalist in the *New York Times* (Tommasini 2012) noted recently, the importance of performance by memory has been drastically decreased in the world's largest concert halls, mainly because of the recognition of its limitation as "memorization of a reading" in relation to the freedom that the score offers to the performer to have contact with the presence of the other material, in this case, the presence of the composer.

[3] As demonstrated by Brian Ferneyhough (1993) in his key-note lecture in Darmstadt.

[4] We claim here for the concept coined by Gilbert Simondon referring to the aesthetical experience of the one who performs an artistic action and not only the point of view of the one who perceives this action. See Simondon (2012).

[5] Proposed here more in the sense of *Gestaltung* than *Entstehung*

[6] It is mainly considered in the research of Caroline Palmer, in works like Palmer (2006) and Palmer (2005).

[7] An analysis of the temporal effectiveness of the musical gesture in Zimmermann's Sonata can be seen in Teixeira and Ferraz (2017).

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Biographies

William Teixeira is a cellist and professor of Performance Studies at the Federal University of Mato Grosso do Sul, in Brazil. He holds a BA in Cello Performance by the São Paulo State University, MA in Music by Campinas University and PhD in Music by São Paulo University. As a cellist he is mostly dedicated to the performance of Contemporary Music, and has premiered dozens of pieces of several generations of Brazilian composers, including performances as a soloist with the Campinas University Orchestra and the São Paulo University Chamber Orchestra. As a researcher he has published several articles and chapters and read papers in conferences in United States, United Kingdom and Portugal about his research on philosophical aspects of musical performance, particularly in its link with Rhetoric.

Silvio Ferraz is composer and professor of Musical Composition at the São Paulo University. PhD in Semiotics by the Catholic University of São Paulo, he has participated in the seminars of Brian Ferneyhough at the Royaumont Foundation in Paris, and under Gerard Grisey and Jonathan Harvey at IRCAM. His compositions have been performed throughout Europe and in United States at the Sonido das Americas Festival, at the Carnegie Hall. He is a CNPq Research Fellow and has published four books, beyond chapters and articles. Currently, he researches processes of writing with extended techniques and technological processing.