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Dominik Puk

musical gesture – between theory and experience

artistic work constituting jointly with description of an artistic work a PhD dissertation
within the procedure for granting a PhD degree in the field of art, in the artistic
discipline: musical arts

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Table of contents

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I hereby declare that this PhD dissertation has been prepared under my supervision and I state that it meets the conditions to be presented in the procedure for granting a PhD degree.

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PART TWO – Description of the artistic work

"To see a World in a Grain of Sand
And a Heaven in a Wild Flower
Hold Infinity in the palm of your hand
And Eternity in an hour [...]".

William Blake (1757–1827), *Auguries of Innocence* (1789)[1].

[1] W. Blake, *Poezje wybrane*, transl. Z. Kubiak, Warszawa, 1972.

Preface

Despite the awareness that this work is a research work, accompanied by specific conventions and requirements (both substantive and formal), I can not start it otherwise than by outlining a certain memory and a few words of explanation.

The specificity of musical studies, I think, is the formation of a sense of belonging to a broader ideological "camp", often coinciding with the Bourdierian field: the professor's class (in wider field such as Academia etc.). This division, the sense of belonging, usually runs along the axis of aesthetic determination of the creative *differentia specifica*, what kind of music is made. In the Polish chamber and "elitist" reality of higher art education (two or three composers per year) this phenomenon is noticeable, although not glaring.

When I started my studies at the Universität für Musik und darstellende Kunst in Graz, Austria (2019-20), this assignment began to emerge very quickly, in a fairly clear and expressive way. Probably the size of the center, the number and provenance of students could have caused this phenomenon to grow to an almost critical level. And yet, I perceived the division of Graz much more as not evaluative, but conscious, systematizing, facilitating choosing one's own path, choosing a pedagogue, etc. Perhaps it resulted from the strength of personality and beliefs of radically different pedagogues, such as Franck Bedrossian, Beat Furrer, Clemens Gadenstätter, Bernhard Lang, Klaus Lang, and perhaps even professorships of the past, dating back to the times of Andrzej Dobrowolski or Hermann Markus Preßl; perhaps, finally, in the multinational melting pot of the KUG community, a general, broad problem of our times has been channeled, e.g. expressed in the dispute between relational ontologies (Pierre Bourdieu, Michel Foucault) and theories of structure.

Thus, there was a group of "gestural" composers in Graz (although there was no clear definition of what this gesture was; understanding was dominated by the focus on creating forms with expressive dramaturgical and narrative features), "constructivist-structural" composers (polyphonists, with particular emphasis on the love of canons and spectral harmonies), as well as, somewhat on the margins of the latter, a group of "conceptual" composers (searching in the currents of relational music, conceptual and conceptive, performative, *etc.*).

This memory is not just an anecdotal fulfillment of the introduction of the research work. This memory documents the moment in *statu nascendi*, in which I myself was confronted for the first time in my life with the need to give a clear, competent answer as to

what I think a musical gesture is, when I, also myself was assigned to the "group" of "gestural" composers. I was surprised by this division, because despite its theoretical clarity, I subcutaneously felt that the fundamental difference did not lie in doctrinal systematizations, determining successive "-isms", or love (or not) of specific techniques, styles, trends. It seemed to me that all music had to be gestural in some way, although I could not name it, describe it with clarity of judgment, and from each of my answers I found many exceptions and exceptions.

Since then, I have been very careful to search for and capture the gesture references available to me and analyze their contents. This term is commonly used, mentioned, but almost never defined or specified. Sometimes the use of the term of "gesture" in various types of theoretical works or compositional statements resembles a phraseological expression of an "empty gesture" conceptually and perceptually, communicating nothing, aiming nowhere. One can also observe the opposite attitude. Some researchers emphasize that "gesture" is intuitively something so important, that it can hardly be used in the context of the described work. This attitude is channelled in combination with the conviction that respectable terms (or their complexes) fixed in past research practice are enough to fully describe the nature of sound phenomena present in the work. "Gesture" is then seen as a redundant concept. On the other hand, for others, on the contrary, the gesture issue may be directly *tertium comparationis*[2]. This creates a situation of dialectical mosaicism, in addition of a fluid, ephemeral character.

A musical gesture does not have its single, specific, fixed meaning in the musical environment, it is contextually individual. Every composer, theoretician (but also a conductor, rhythmist, music educator, luthier, musician of a specific instrument) "forges" his understanding of gesture, often non-committal, or even "informal", on the basis of "environmental" observation, "parroting" of colleagues, authorities, overheard judgments, in which the context of using this term plays a significant role. The only common point of these different understandings are the regularly appearing expressions: "movement" and

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[2] Reviewing *Music Grove Online*: *The Oxford Dictionary of Music* and *The Oxford Companion to Music* I noticed, that no has contained a entry "*gesture*". However, as many as 910 entries in the encyclopedia contain this phrase – both items concerning composers, as well as those concerning styles (including national, cultural) and genres (especially opera), and even techniques and trends. The contexts used there definitely coincide in scope with the dialectical (dogmatic-hermeneutical) dispute presented in this work, in which the gesture is treated both "inside" and "outside" the piece of music (entry *Adorno*, but also *Filming, Videotaping*), as a materialistic formula, but also an idealistic, sound and performative (phrase: "*Gesture-derived" Figures (Jazz)*, in the entry *Piano (Jazz)* the same as, *Haptics*, *Tāla*, *Krakowiak* whether *Music Theater*), semantic and sensual, is used in the context of events-actions and process shapes. At the glance – it is a practical confirmation of the lack of uniform interpretation of the issue. At the same time, there is already a confirmation of some theses and hypotheses presented in the work – among others, the practical application of the concept to musicians of various cultural and civilizational circles, as well as various styles, trends (entry: *Sturm und Drang*), genres, epochs (marked in the entry *Frescobaldi*, *Dvořák* but also *Furrer* – interestingly, in the case of the entry *Grisey* The encyclopedia does not use the term "gesture" at all.) [source:] https://www.oxfordmusiconline.com/grovemusic/ [Accessed: 01.05.2023].

"communication", or "meaning". Thus, as Agata Skórzyńska defines after Przemysław Czapliński, it is a situation of convolution, opposed to the determination of all "-isms", and opening up to transdisciplinary research, both in relation to the ontology of the phenomenon and a set of specific practices, including, what is particularly important, my own. [3]

And indeed, it was in Graz that I realized that what I do and want to do musically is to shape my own compositional craft using various forms of gestures (in my own understanding): not starting from the technique, form, harmonic system, but each time starting from a specific gesture, this "seed" to be able to construct on its basis, in connection with it a true "ocean", A coherent universe of means needed to build a piece of music. That is why I devoted my master's thesis to the gesture, and this description accompanying the artistic PhD dissertation (although it is said *ne bis in idem*), and the hermeneutic-research processes became the basis for me to launch self-awareness processes, thanks to which I better understand myself as a composer, my craft and what I want to convey in and through sound. This work is therefore a form of practical theory, an attempt to present my own, synthetic approach to the problem and is definitely not an expression of a strong, methodological position. I find such a position in this matter inappropriate due to the surrounding state of arts, when the multitude of practices of other composers or researchers (often contradictory, extreme, adversarial ones) is intertwined consciously or unconsciously with one's own practice.

Hence the source of this description, accompanying the artistic work, the sound spectacle *visibilium et invisibilium* for orchestra, group of amateurs, light, movement, audio and video playback. This work is a summary of a certain stage of my compositional path, correlated with research goals:

(1) attempts to understand what from my subjective perspective the gesture actually is, what its essence is, while referring to already established positions. **The aim is therefore to search for a flexible, capacious and useful definition of the musical gesture**;

(2) Attempts to study the objectified layers of musical gestures: searching for answers to what extent it is a universal phenomenon and to what extent it is local, to what extent it can be applied to works of various provenances, epochs and even civilizational circles. **The aim is therefore to seek an answer to the question of how a musical gesture is a tool for effective communication**;

(3) Being convinced that the gestural understanding of sound structures as certain synthetic wholes (and not only phenomena subordinated to rhythm, harmony, or

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[3] A. Skórzyńska, *Praxis i miasto. Ćwiczenie z kulturowych badań angażujących*, Warszawa, 2017, p. 7.

other individual categories) is not a boon of the twentieth or twenty-first century, but has its much earlier roots, I also wanted to find those moments in history that spectacularly indicate this. **The aim is therefore to confirm the intuition about the development of an understanding of musical gestures long before they are theoretically codified**;

(4) attempts to search for a description of the hierarchy and function of gestures in the musical piece system. **The aim is therefore to select a method of gesture analysis for a wide range of musical works, along with its practical application**.

The research work is based on the method of dogmatic analysis and criticism of the available state of arts expressed in sources, especially hermeneutic literature. The second important pillar is the analysis of cultural products, thanks to which a detailed picture of the practical (compositional) scope of application of the term "gesture" can be detailed. As a complement to this picture, I support myself with my own conclusions, including those resulting from consultations that I have conducted (and still do) with musicians of various specialties (composers, music theoreticians, rhythmists, music educators, musicians of various instruments, conductors, *etc.*).

The state of arts about gestures expressed in sources is currently very rich, although almost exclusively foreign-language: this work, it seems, is the first Polish-language synthesis. Since the creation of my master's thesis in 2020, the literature on the subject is still dominated by three extensive publications in the field of musical gesture theory, defining separate understandings and perspectives of approach: *Interpreting Musical Gestures, Topics, and Tropes: Mozart, Beethoven, Schubert* by Robert S. Hatten, *Musical Gestures: Sound, Movement*, and Meaning edited by Rolf Inge Godøy and Marc Leman, and *The Topos of Music III: Gestures, Musical Multiverse Ontologies* edited by Guerino Mazzoli.

All three works, despite (not always explicitly expressed) reference to the definition of Hugues de Saint-Victor or a fairly similar approach to some philosophical and aesthetic aspects, show individual approaches to understanding and using the musical gesture (defining oneself in relation to the problem of semioticism and sensuality of gesture), as well as the distribution of accents and references to the latest trends or technological applications. Without wanting to repeat their views in all their complexity, I quote them in this work to the extent necessary to illustrate the diversity of attitudes towards the studied phenomenon and to explicate answers to the research questions posed to myself. In the field of literature, I note the spread of thematic conferences, especially in French-speaking circles, and the habit of publishing very extensive post-conference publications: among them, the

publication edited by Marcelo Wanderley and Marc Battier *Trends in Gestural Control of Music* has a special gravitas, published by IRCAM in 2000. I also notice a "rash" of small articles devoted to casuistically specific applications of gesture in creative practice.

As correlated with my research goals, taking into account the "convolutional" nature of the studied phenomenon, I accept **the need for a transdisciplinary approach** in order to illustrate it more fully. Due to that I chose as a special kind of compass the thought of Johann Gottfried von Herder, whose attitude I value and accept as my own: both in the field of acoustics (perceiving sound phenomena as synthetic, inseparable complexes oriented to perception), cognitive reflection (theory of thought and cognition), semiotic (theory of translation) and finally avoiding systematization. This decision was accompanied by another, somewhat logically necessary, thanks to which I outline my own approach to understanding the gesture, deliberately semi-open and antisystematizing, balancing perhaps on the verge of methodological eclecticism, but taking into account the diversity of possibilities of understanding the phenomenon. Hence the presence in the dissertation of various types of semiotic theories (infinite semiosis, intersemiotic translation, generative grammar, sign theory), philosophical and cultural theories (relational ontologies, structural and constructivist theories, idealistic, realistic and materialistic ontologies), cinema theory (audiovision), pedagogy (effective surprise) or some manifestos of specific compositional trends*, etc.*

"[...] Even wandering around some undeciphered phenomenon, impossible to fully understand, but wandering closer, sensing, guessing – has its deep meaning." Writing a work devoted to musical gestures, I have a kind of feeling that every single statement or hypothesis expressed here should contain in its footnote a reference to this sentence by Witold Lutosławski – on the one hand comforting and encouraging research, on the other being a[4] *memento* against falling into the "theory of everything". Whatever is written about music is basically a flat ontology, a relations suspended and existing only because of creative compositional orders, and expressing these great contents in a linguistic sentence, so to speak, God forbid, in an expression in the logical sense, one flattens what can be experienced, intuited, known and understood without shortcuts and limitations "with the gaze of the mind with a strange speed".[5]

However, undertaking an extensive theoretical reflection is rooted in the constantly posed question: if I am not sure what is actually being researching, would not the description of an artistic work be only recalling convenient statements as a framework for the emergence of empty erudition, especially in the face of such a broad, ambiguous issue? I am not

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[4] B. Pociej, *Lutosławski a wartość muzyki*, Kraków, 1976, p. 133. [translation after Lutosławski done by myself]
[5] Tomasz z Akwinu, *Suma Teologiczna, Suppl., q. 87-101: Rzeczy ostateczne*, vol. 34, transl. P. Bełch, Londyn, 1986, issue. 88, art. 2, p. 63. [translation after Bełch done by myself]

convinced that this would correspond to the attitude of searching for research truth, serving in my case primarily artistic truth. An extensive description is the basis for revealing my line of reasoning and intuition, from which the accepted research hypotheses and their creative transformations arise, which are elements of my composing technique and at the same time are embedded in the theoretical context and composing practice. For this reason, I use the interpretation of the vague phrase "description of an artistic work"[6] in the *broad sense*, but in accordance with its linguistic wording – understood not only as a description of the work itself (or at least a description of the work in a selected aspect) but as a description of a phenomenon, an explanation of the central concept around which the artistic work focuses.

The description of the artistic work consists of four chapters. **The first chapter**, historical-dogmatic, concerns the movement of sounds as a category introducing the musical gesture, along with strategies of aesthetic recognising it, as well as a reflection on the universal perception of the movement of sounds as a naturalized cultural category. The subject of the **second**, dogmatic **chapter** of the dissertation is a review of the most important concepts and perspectives of understanding the musical gesture. **The third chapter** is devoted to an attempt to reconstruct the structure of the gesture: its subject, object, space and functional levels, as well as an attempt to define and present my own hypotheses, refer to other, already established concepts of research nomenclature, as well as enumerate gesture manifestations in the history of music. **The fourth chapter** is a practical synthesis of theoretical considerations by analysing Arvo Pärt's *Cantus in Memory of Benjamin Britten* in terms of revealing various gestural aspects. The work ends with a short **ending** containing a discussion of the conclusions drawn from the content of this description.

The counterpoint to the text of the dissertation are references to my own work *visibilium et invisibilium* made locally and contextually (i.e. the order of the discussed layers of the work results from the order of the theoretical issues discussed). These references are highlighted by a graphical "graying". An example is presented below:

> **Example of a comment.** *Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin commodo sapien nisl. Donec vel commodo odio. Ut id nisl id est pellentesque mattis. Suspendisse consectetur at purus sed condimentum. Maecenas pulvinar ultricies risus, eget latinia justo molestie ac.*

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[6] Article 187(4) of the Ustawa z dnia 20 lipca 2018 r. *Prawo o szkolnictwie wyższym i nauce* (Dz. U. 2018, item 1668, as amanded).

Such a construction will make it possible to illustrate the influence of theoretical considerations on the shape of an artistic work and – equally well – the influence of the my own compositional *πρᾶξις [prâxis]* on the formation of theoretical reflection.

1. The movement of sounds as an acoustic category and a naturalized cultural category, introducing a musical gesture

1.1. The process of naturalization of cultural categories as a social and cultural framework for identifying the perception of sound with movement

"So what of these ideas can music really reproduce? Again, movement."[7]

In order to understand the phenomenon of identifying the perception of sound in connection with movement in all its original complexity, one must first take a kind of mental journey into the "past" of aesthetic thought, to 1854, when the young Eduard Hanslick in his *Vom Musikalisch-Schönen* rebelliously wrote the famous sentence about "Tonend Bewegte Formen", or **"sound forms in motion"**[8] (or picturesquely, though less precisely, "forms sounding in motion"[9] or "forms of sound of motion"). At that time, the whole of his discourse was focused on a deep criticism of the "programmatic" attitude, that is, inscribing in the work as its significant elements (in the structural sense) and weighing non-sound elements on its architecture. At the same time, this attitude sought the independence of the musical narrative, expressed in the spirit of this sounding in motion through sound structures. And yet, it is an attitude that was probably the first to synthesize intuitions and positions much older and more respectable quite emphatically.

I will dwell for a moment on Hanslick's thought – very interesting, complex and far-reaching. One could say maliciously that he rejects one type of metaphor in favor of another: while definitively excluding the possibility that the musical structure expresses (reproduces) [external] feelings, the author at the same time content himself with the assertion that the musical structure expresses (reproduces) movement that can be identified either with some unnamed [internal] feelings that are contained only in music, or identified with one of the elements, which makes up the feeling along which the line of iconic mapping runs – and such a component is supposed to be movement. Hanslick suggests, however, that non-sonic feelings in aesthetic work and experience have in such a relationship (to be precise, a strong binary relation) to actually existing feelings, as a truly existing landscape is juxtaposed with the one immortalized in the landscape painting, but which is a projection of the artist's

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[7] "The content of music is sound forms in motion." E. Hanslick, *O pięknie w muzyce*, transl. S. Niewiadomski, Warszawa, 1903, pp. 23-24. [translation after Niewiadomski done by myself]
[8] *Ibid.*, pp. 203-204.
[9] A proposal for translation overheard in private conversations with Mikołaj Rykowski.

fantasy. [10] The philosopher himself says that it is such a relation as that of immanence to transcendence, [11] in a word, music is to express – its own "emotions" existing only in itself and in its own proper way – this choreographic sound in motion. Despite the seemingly contradictory nature of this dialectic, Hanslick did not deny the existence of these "emotions", but he excludes them essentially from comparative criteria – external to internal, actually existing to fanciful, meaningful and signifying – and content himself with contemplating in aesthetic experience the reflection of the meandering of the internal stream of sounds, impossible to fully and adequately describe, like *the élan vital* of a work.

This understanding of the content in the aesthetic work and experience will provoke the philosopher's refinement of the approach to these *tönende Bewegungen*: "they resemble architecture or dance, and in particular the beautiful relation of their lines or movements, devoid of any other content." [12] And yet, lazily surfaces the fact that qualitative description, and often the understanding of the sound structure, its development, the creation of larger narrative and dramaturgical sections as sound forms in motion (which Hanslick saw in the contrapuntal, harmonic, and textural aftermath) [13] always reveals **intuition about the non-sonic systems of their organization** – constitution based on basic human sensory and psychic experiences, such as a sense of: symmetry or chaos, tension, relaxation, ascent, falling, building a certain state, striving "from", striving "to", remaining or resting, achieving fulfillment, delaying fulfillment (deception) or entropy (disintegration); whether feeling: purpose, mood or atmosphere. Although, indeed, according to Hanslick's intuition, these indicators will certainly not be an *explicit* feeling, we can say about them as very concrete and often complex qualities of movement, or at least its perception. For Hanslick, this movement is the only thing left of the non-sonic content and can be transferred into the grid of sound contexts.

Tonend Bewegte Formen is, therefore, in my understanding, at the heart of "absolutism" the impossibility of denying this "figurative", movement-like value of the musical course, which is at the same time a means of direct reference to human experience. Hanslick is one of those moments in history in which the sense of the connection between music and movement is manifested with all its power: its dynamics, intensity (density), processability,

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[10] K. Guczalski, *Czy Eduard Hanslick był formalistą?*, [in:] K. Lipka (ed.), *Muzyka i filozofia I, Refleksje, konteksty, interpretacje*, Warszawa, 2017, p. 38.

[11] E. Hanslick, *Op. Cit.*, pp. 81-82.

[12] *Ibid.*, p. 204. [translation after Niewiadomski done by myself]

[13] Authors commenting on Hanslick point out in the context of the development of sonata form and the sonata cycle itself that this theorem can also be interpreted as perceiving the adaptive power of forms, not as rigid prefabricated elements, but rather perceptual schemes, opening up to creative and expressive individualism. In principle, the position of the aesthetic in all its novelty and inventiveness can be reduced to sensitization to the understanding of form in close dependence on the ways of listening. Aesthetic, formal understanding of the work according to Hanslick It is rooted in perceptually oriented conscious listening.

intention. At the same time, the philosopher's thought is a decision for a specific, culturally constituted form of this belief (which will be considered later – inscribed in the Aristotelian trend).

> "The specific mapping chosen within a tradition of discourse about music reflects not so much absolute musical structure as it does the broader cultural practice within which music and its understanding are embedded: mappings reflect the conceptual models that are important to culture. The cross-domain mappings employed by any theory of music are thus more than simple curiosities — they are actually key to understanding music as a rich cultural product that both constructs and is constructed by cultural experience."[14]

The belief in identifying music, or at least perceiving it (mapping it), in connection with a certain type of movement, and at the same time constant reference to its various types of non-sonic qualities (especially movement understood as meaning: the course of thought or as the movement of contexts) can in principle be considered as **a naturalized cultural category**, where the cultural category presented as a two-argument relation: "X culturally (socially) creates Y". [15] That is to say, a category is created so certain and so obvious in culture that it is essentially indisputable (although this does not mean that it is not contradictory internally or externally). [16] This category begins to function as a biological fact, not necessarily conscious, and is treated as part of a hard reality in which the fact of its human origin founded or, after all, in the perceptual apparatus has been forgotten. The study of this association is essentially a search for emerging historical communities of meaning. In the case of a musical gesture, such a community is certainly the movement of sounds, the synthesis of psychoacoustic experience and the emerging two equally legitimate hermeneutics of their explanation: sensual and symbolic.

When mentioning the problem of naturalization, the concept of **enculturation** should also be introduced, which Krzysztof Moraczewski defines as "in the first place not the acquisition of conceptual knowledge, but the formation of perceptual habits, ways of hearing;

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[14] L. M. Zbikowski, *Conceptualizing Music*, Oxford, 2004, p. 72. *Cf.* translation by E. Schreiber, *Muzyka wobec doświadczeń przestrzeni i ruchu – między metaforą pojęciową a percepcyjną*, [in:] *Sztuka i filozofia*, 40, 2021, p. 109.

[15] R. Mallon, [entry:] *Naturalistic Approaches to Social Construction*, branch No. 1 *What is Social Construction?*, [in:] E. N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*, summer 2022. [source:] https://plato.stanford.edu/entries/social-construction-naturalistic/ [Accessed: 01.05.2023]. From now on, any own translations if the author of the translation is not indicated.

[16] *Cf.* „The very notion that tonality is natural is itself an illusion. Tonality did not exist from the outset. It established itself in the course of a laborious process which lasted far longer than the few centuries during which the hegemony of major and minor has prevailed. The music that preceded it, the Florentine Ars Nova, for example, is just as unnatural and just as alien to contemporary ears, as are the works of the late Webern or Stockhausen in the proud ears of the normal listener. The semblance of naturalness which serves to disguise historical relationships inescapably attaches itself to the mind that insists that the rule of reason is unimpaired while surrounded by a world full of persistent irrationality.." T. W. Adorno, *Music and New Music*, [in:] *idem*, *Quasi Una Fantasia. Essays on Modern Music*, transl. R. Livingstone, London, New York, 2011, p. 315.

so to speak: structuring the capacity for *aisthesis*[17]. This is an experience well known to ethnomusicologists who encounter in the study of the music of foreign cultures precisely the threshold of perceptual rather than conceptual, resulting from different enculturations."[18] Enculturation, then, is a form of individual or group ex post adaptation, "fine-tuning", "tempering" to the aforementioned perceptual thresholds, in contrast to naturalization processes, which "impersonally" shape perceptual-conceptual thresholds *in principio*, so strong that they are applied *ex tunc*. Naturalization processes took place in various forms and scopes within different cultures, but they have as a common basis metaphorical descriptions of sensory sound experiences.

I see confirmation of intuition about the perceptual (perceptual-aesthetic) nature of naturalization of the perception of sound structures as motor and in some way communicative in neurocognitive and anthropological couplings with music theory, and especially in one of their early manifestations – Alexander Truslit's experiment from 1938.[19] It consisted in the use of similar musical competences in the field of music theory, composition, harmony and counterpoint of two participants. The first task was to map the graphic "movement" of the curves drawn by himself (abstract expressive streamers) to the musical succession of sounds by composing a melody corresponding to the plotted shapes. The second participant, based on an auditory analysis of the melody composed by a friend, was to draw a graphic curve according to his imagination.

The comparison of the results showed the convergence of curves drawn by both the creator and the recipient, which are confusingly similar to each other. Due to the fact that both participants were very thoroughly acquainted with the Truslits theory of musical movement – harmonic, melic, rhythmic, etc. – and one can suspect from the deleted melodies that they were academically educated participants (familiar with harmony, counterpoint), moving fluently within the conventions and aesthetics of their era and environment (the participant N. was said to have mastered "internal movement", participant T. could have been Truslit himself) – the mutually understandable metamusical symbolism of the recorded structures could not be excluded. The goal of the experiment was achieved by confirming the observation that a certain type of movement communication in music is possible, and the reference to it is understandable and indelible.

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[17] αἴσθησῐς [*aísthēsis*].
[18] K. Moraczewski, *Muzyczna złożoność i pewna specyficzna forma doświadczenia estetycznego,* [in:] *Fenomen wieczności. Zeszyty naukowe Centrum Badań im. Edyty Stein*, nr 15, Poznań, 2016*, p. 299. [translation after Moraczewski done by myself]
[19] More: B. H. Repp, *Music as Motion: A Synopsis of Alexander Truslit's (1938) 'Gestaltung und Bewegung (disambiguation) in der Musik',* [in:] *Psychology of Music*, vol. 21, no. 1, 1993, pp. 265–278.

However, there are arguments that undermine the sense of conducting this experiment (and others like it) – namely having similar levels of musical competence by participants. Automated reflexes, mediated by the mental reconstruction of the movement of the hand drawing the shape itself (as a result of action, a kind of "connection of dots" – which in the later part of dissertation will be described as the "engine" of embodied cognition) require, however, many years of professional training – not to mention the consolidation of experience in "domesticated" cultural reflexes – would therefore not realize any universal value. On the other hand, being aware of these shortcomings, numerous similar attempts are carried out to this day on various social, professional and cultural groups, based on the search for communities of experience and communication.[20]

Lawrence Zbikowski, writing about **mapping between domains**, has in mind conceptual analogies between space-time sensations or perceptions (as concrete and known), and musical sensations and perceptions, which are purely abstract and unknown.[21] They contradict the reflexes of *lege artis* dictionaries, which do not illuminate the ontological qualities of phenomena (ignoring the question "what is it" or "why is it"), describing the technical value and the resulting effects (focusing on the question "how is it [made]").

The description and perception of musical phenomena, especially pitch-oriented phenomena, in the Western cultural circle are focused very comprehensively, both around the experience of changes in position in Euclidean space (higher, lower, further, closer), physical dimensions (large, small) and categories of human age (birth, aging, dying) or even certain categories of a social nature, feudal (perceiving certain musical styles as legitimate, with a simultaneous conceptual-perceptual refusal to recognize others as equal, because, for example, they are produced "by roars" according to the opinion of the determinant; some instruments are predestined to perform a solo function, others, on the contrary, treated only as accompaniment; in the orchestra, string instruments have to "work" much more for a statistically much smaller number of playing parts of wind instruments, brass and percussion). These perceptions (leading to the construction of conceptual analogues, mappings between domains) are so strong that they are even unconscious and perceived as "natural", "obvious" – so they are naturalized cultural categories, with their accompanying

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[20] E.g. Interpretation of famous illusioni *speech to song* discovered by Diana Deutsch in the context of the rules of classical musical counterpoint, over which currently conducted by Robert Gogol – In these studies I also have my own small share. *Cf.* D. Deutsch, T. Henthorn, R. Lapidis, *Illusory transformation from speech to song,* [in:] *Journal of the Acoustical Society of America*, 2011. Another example would be Ukrainian experiment on intersemiotic the relationship between music and vision in film. *Cf.* T. Lukianova, A. Ilchenko, *Intersemiotic Translation: Meaning-Making in Film and Musical Art*, [in:] *Cognition, Communication, Discourse*, 2019, pp. 78-95.
[21] L. M. Zbikowski, *Op. Cit.*, p. 76.

possible consequences. The search for moments of attribution of such properties to music occurs very often in the context of the concept of emotions in music.[22]

In the field of communities of experience and communication – especially in the context of cross-domain mapping – there are serious inter- and transcultural studies, mainly ethnomusicological or cultural studies. "The Kaluli tribe in Papua New Guinea describes the melody in terms of the flow of a waterfall.[23] In Bali and Java, the relations between pitches are defined in terms of size,[24] and in the Amazon basin (Suyá tribe) – in terms of age". Interestingly, the described dialectics, in addition to their certain static or dynamic spatial reference (location, size), also have a process reference, consequences, somehow motor, developmental (age, flow).[25], [26]

The perceptual-conceptual reflex may be influenced primarily by the language system, which can be very well seen on the example of the Hopi (Native Americans, customarily referred to as Arizona, although repeatedly displaced, so their connection with a specific geographical region is weakened). Their language forces a change in the paradigm of perceiving time and space due to the systemic elimination of verb constructions defining the location of activities on the timeline: the Hopi operate neither past nor future tense, but, as Benjamin Whorf writes, the disappearance of time directs attention to the transformations of space – much closer to metaphysics than Newtonian mechanics.[27] This metaphysics organizing the Hopi cosmos divides everything into objective (revealed) and subjective (revealing) universes. In this way, in order to be able to linguistically carry out these

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[22] *Vide*: W. F. Thompson, L. L. Balkwill, *Cross-Cultural Similarities and Differences*, [in:] P. N. Juslin (disambiguation), J. A. Sloboda (ed.), *Series in Affective Science. Handbook of Music and Emotion: Theory, Research, Applications*, Oxford, 2010; M. B. Küssner, *Shape, Drawing, and Gesture: Cross-modal Mappings of Sound and Music*, London, 2014 [work Not yet published]; P. Kivy, *Brzmienie uczuć*, transl. J. Czarnecki, M. Migut, I. Młoźniak, M. A. Szyszkowska, Warszawa, 2022; M. Susino (disambiguation), E. Schubert, *Musical Emotions in the Absence of Music: A Cross-Cultural Investigation of Emotion Communication in Music by Extra-Musical Cues*, [in:] Plos ONE, 15(11), 2020; G. A. Bryant, H. C. Barrett, *Vocal Emotion Recognition Across Disparate Cultures*, [in:] *Journal of Cognition and Culture*, No. 8, 2008, pp. 135-148; L. B. Meyer, *Emocja i znaczenie w muzyce*, transl. A. Buchner, K. Berger, Kraków, 1976.

[23] The consequences of adopting such a dialectic are revealed, for example, in the absence of perceptual perception of *unison* (in the Western sense) as satisfying (because the waterfall does not "follow" but meanders, flows, is multilayered), and directing sound processes (rhythmic-melodic, meter, but also body movement) "in bottom' (just like a waterfall, which can't "climb" uphill). *Cf.* S. Feld, *Sound and Sentiment, Birds, Weepings, Poetics, and Song in Kaluli Expression* Durham, London, 2012.

[24] The consequences of adopting such a dialectic are manifested in the division of the generated sounds (in melo-rhythmic terms) according to their quality: "fathomless", generated from larger instruments are more respected, extracted less frequently and in a narrow range, while "smaller" sounds generated from smaller instruments are perceived as the "feudal" basis of the sound structure, extracted intensively and to a much greater extent. Gamelan is therefore a reflection of the social hierarchy (layers operating with less respectable, "small" sounds have to work hard to perform, while layers operating with respectable, "bigger" sounds will work much less).

[25] The consequences of adopting such a dialectic result from the perceptual perception of music as essentially related to rituals (the word describing "music" also means "ceremony"; so there are no songs related to other areas of community activity, e.g. work, play, courtship, etc.), which in turn are related to reaching successive stages of age by members of this community. *Cf.* A. Seeger, *Why? Suya (disambiguation) Sing: A Musical Anthropology of an Amazonian People*, Urbana, Chicago, 2004.

[26] E. Schreiber, *Op. Cit,* p. 109. [translation after Schreiber done by myself]

[27] B. L. Whorf, *Model uniwersum Indian*, [in:] G. Godlewski (ed.), *Antropologia słowa – zagadnienia i wybór tekstów*, Warszawa, 2004, p. 436 i d.

distinctions, the Hopi use spatial phrases describing extension, operability and periodicity (a time turn, but limited to the perceptual "now") and not necessarily their process value, which would determine the need for grammatical tenses. Therefore, Whorf describes, what in the West "is coming", in the Hopi "ends here", "begins here". [28]

Thus, this is a very special case in which the cultural naturalization of the linguistic description of movement eliminated its process-temporal value – riveting to a hard, rationally describable reality – in favor of revealing a value rooted in space – open to take into account its expressive-internal, metaphysical side. The lack of serious studies available to me on the aesthetics of music in the Hopi language makes it impossible to outline at least the assumptions of their description of sound phenomena, but these basic information also allow me to imagine the qualitative aspect of their potential description, and hence, the systemic perception of the movement of sounds.

These examples of non-Western civilizational circles reveal that the **search for movement as a source of expression (including human expression), at least sometimes, is a form of intuitive precultural reflex (i.e. a perceptual community, not an abstract one) and at the same time it is an indicator of how variously it can be subjected to the processes of naturalization of** cultural phenomena, especially since these processes proceed simultaneously with an interesting spatial or temporal variation as a plane unifying experience with concepts expressed in language.

Nevertheless, we must not forget about some obvious **barriers, not so much conceptual but perceptual**. Nicolas Cook notes that non-Western artistic traditions tend to focus on performance and improvisation, [29] while Western traditions focus on aesthetic works and aesthetic literature. [30] For the West, therefore, "performativity" is instinctively transparent (invisible) to the work as subordinate to the hierarchy, while for non-Western traditions "performativity" can sometimes be a *sine qua non*. He also mentions other perceptual differences: Western culture enculturates to the perception of harmony and melody (in this it leads the obvious way as focused on the sensitivity for the "abstraction"), while non-Western

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[28] *Ibid.*, p. 437.
[29] *A contrario* – the musical culture of Japan, where music has an evidently established, composed structure. *Vide*: 能 *[Nō]*, 歌舞伎 *[Kabuki]*, 文楽 *[Bunraku]*.
[30] According to the researchers, this paradigm is being transformed "before our eyes" due to the transition from a culture based on epistemological transmission (from which conceptualization is formed and developed) to digital transmission. This transition already manifests symptoms of revolution, comparable to the revolution that the transition from oral transmission turned out to be.performative to epistemological. A more complete formation of the effects of the transition through the medium of transmission may arise in the near future, along with the ways of development, implementation and adaptation simulated intelligence in everyday life. *Cf.* H. Lehmann, *Rewolucja cyfrowa w muzyce. Filozofia muzyki*, transl. M. Pasiecznik, Warszawa, 2016.

to the perception of rhythm (which is much closer to perceptual sensitivity than abstract). [31] Finally, in some cultural circles, when presenting the music of Ludwig van Beethoven or The Beatles, the audience would not necessarily perceptually classify this complex sound phenomenon as music (due to the perceptual-conceptual ontological difference in the type, quality and nature of the activities producing sound, which do not allow perceiving and naming the sound structure generated in this way as "music"). The same is true of the question of pointing out perceivable sensory and psychic experiences as universal: due to differences, it can be assumed that the only experiences common to all humanity seem to be only birth and death.

Without conducting comprehensive and detailed transcultural, ethnomusicological, cognitive, psychological research, etc. [32] in principle, it is impossible to seriously express any categorical judgments regarding the "precultural" perception of categories such as "movement", "communication", "gesture", which remain in the orbit of interest of this dissertation. Therefore, in this dissertation, referring to the category of embodied cognitions, effective surprises, communities of sensory experiences, etc. I silently hope that they can be part of a unifying platform, sensually accessible to every human being. If not, I must be content to limit the scope of hypotheses to the Western civilization and those who are enculturated to receive works of art within this artistic tradition.

What is certain, however, is – as Alexander Truslit confirmed in the *Gestalt* experiment, and as confirmed by Albert Stanley Bregman in the proposal of the auditory stage – that **there is a cognitive perceptual community, allowing the audience to determine the similarity or compatibility of the reception of an acoustic phenomenon. However, the condition is a competence or cultural agreement.**

In this respect, the Western understanding of the connection between physical movement and the movement of sounds cannot be understood without two unique traditions – Platonic and Aristotelian – which have marked the axis of dispute of many aesthetic categories, especially the presence of emotions in music, the problem of education and the function of music in the postulated society, but also indirectly revealed the fact that already in the 5th century before the birth of Christ the naturalization of the category of the movement of sounds as a cultural category was a process accomplished and established.

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[31] N. Cook, *Analysing Performance and Performing Analysis*, [in:] N. Cook, M. Everist, *Rethinking Music*, Oxford, 1999, p. 260.
[32] That is, institutional, expensive, written out in the perspective of many years, and perhaps decades, *Ergo* outside my cognition.

The result of the fascination about movement of the music, the liminality of the experience of a musical work and at the same time shaping a space of λόγος *[lógos]*, which I develop in various proportions, intensities and approaches in my composition work in recent years (including preparatory works for *visibilium et invisibilium – technique of expression II* for chamber orchestra, audio and video playback, *le court chemin, qui est long* for two extended double basses, *Παροξυσμός* [*paroxysmós*] for vocal sextet and electroacoustic means) is obvious to me the way of adopting formal and material thinking in a new piece *visibilium et invisibilium*. All three areas of interest will be discussed in more detail later in this dissertation.

1.2. Two culturally naturalized paradigms of perceiving the movement of sounds – paradigms of externality (Platonic) and internality (Aristotelian)

I became aware of the traditional division – let me simplify it – into the movement that governs everything in music[33]: **the external (externalized) in Plato and the internal (internalized) in Aristotle** that I became aware only when I re-read their canonical texts on music (upbringing, emotions, the nature of scales, etc.) and in texts from various fields of their spiritual heirs, Augustine of Hippo (in texts about time) and Thomas Aquinas (in the issues of the *Summa Theologica* concerning future [posthumous] ways of cognition and determining the degree of their dependence on time and space), as well as listening to a lecture by Krzysztof Guczalski (admittedly founded on the basis of reading the idea of emotions in music). The emerging question – whether they were the first to expound this view, or maybe they themselves are part of a wider tradition (e.g. borrowed by Pythagoras in India or perhaps taken over by Plato from Damon of Athens[34]) – is difficult to unequivocally resolve. Their view seems to be fixed and crystallized to a sufficient extent, because they mention it almost on the margins of other considerations (especially Aristotle), as if they were referring to something already obvious, well-known to the recipient of their works, which allows us to inflict not talking about *a novelty*, but about the inscribing and creative development of already existing trends in the perception of music. Of course, one can also

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[33] This division had its various faces in the history of music – including the dispute between supporters of absolute and programmatic music in the 2nd half of the nineteenth century. There were also epochs synthesizing in their aesthetic attitude both proposals, in which one could not be separated from the other. In this sense, the medium (as a whole, the carrier [drive] of the expression of a musical work) and the concept (message, idea that the composer wants to convey), described by Harry Lehmann in his *Digital revolution,* they are inextricably linked to each other until the sense of expressing the concept is undermined in the work, aesthetic experience and through the medium, e.g. in John's conceptual work Cage. *Cf.* H. Lehmann, *Rewolucja cyfrowa w muzyce…, Op. Cit.*, p. 134 and next.

[34] R. Kasperowicz, *Od Arystotelesa do Adorna w poszukiwaniu teorii ekspresji muzycznej*, [in:] *Ethos: kwartalnik Instytutu Jana Pawła II KUL*, annus 19, no 1/2 (73/74), 2006, p. 163.

consider as equally probable a scenario in which the works of both philosophers, concerning their concept of the dialectic of music, were expressed *explicitly*, but were lost in the depths of memory and history.

Plato's conception of music as movement focuses on the mimetic concept, movement directed outwards – a movement of tones intended to resemble, imitate both through structures, but also through the selection of *modi*, the modulation of the voice, the gestures of a brave man and a certain form of desired mood, atmosphere (the author mentions tearfulness, which should be avoided and sublimity, which he promotes). It is therefore a special feature of being on the one hand a dynamic image, expressed at the same time through the similarity of movement. [35] The ancients would have described this similarity as **σημεῖα [sēmeia] (signs** that today should be understood as products constituted by convention). [36] Augustine of Hippo and his successors will take it up, thinking about music as the art of good modulation (*ars bene modulandi*) [37] – and this *bene modulandi* is understood much more narrowly by the Hipponian philosopher – focusing in his argument not on the nature of this movement, but on the ways of shaping it (here especially by the number and proportion of measures and intervals).

This strange similarity of the movement of sounds to the movement of the body, noticed by Plato, and their overwhelming influence on the mind and body of the recipients, understood as a magical influence, is all the more strongly manifested because Plato proposes a number of calocatagalic fortifications and rationing resulting from his beliefs both in the technical aspect of creating music (selection of scales, instruments) and the social aspect (a kind of "police", music censorship, aimed at ensuring an appropriate level of "ethical" content in the music).

The opposite understanding of music as movement is presented by Aristotle. He argues that music reflects ethical states (emotions, virtues) through natural similarity, pointing to **ὁμοίωσἳς [omoíōsis] (images of ethical characters).**[38] Therefore, it is to express the feature of similarity to emotions – movements of the soul, through which its harmony and natural state are restored. [39] The influence of music on the recipient occurs in the technical sphere, *ἦθος [êthos]*.

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[35] Platon, *Państwo*, transl. W. Witwicki, Kęty, 2003, p. 398.
[36] R. Kasperowicz, *Op. Cit.*, p. 166.
[37] Augustyn z Hippony, *Św. Augustyna traktat „O muzyce"*, transl. L. Witkowski, Lublin, 1999,p. 108 [I, 2, PL, XXXII].
[38] K. Moraczewski, *Sztuka muzyczna jako dziedzina kultury. Próba analizy kulturowego funkcjonowania zachodnioeuropejskiej muzyki artystycznej,* Wydawnictwo Naukowe UAM, Poznań, 2012, p. 131.
[39] Arystoteles, *Polityka*, transl. L. Piotrowicz, [in:] Arystoteles, *Dzieła wszystkie*, t. I, Warszawa, 2003, pp. 197-198.

This evoking of moods is emphasized even by the division of songs into genres introduced by Aristotle due to the direction of their impact (ethical, practical, enthusiastic) and the encouragement to adapt technical and compositional means to the intended directions of influence (selection of instruments, scales). Knowing the invisible movements of the soul, experiencing them (preferably in the form of the experience of κάθαρσις [catharsis] and the accompanying purification, relief and pleasure), and finally the executive action is a movement, a movement of the soul with the right measure, rhythm, which is why Aristotle recommends creating music not for itself, but oriented to the listener – it seems not so much as to flatter tastes (although the pleasure of music is important and clearly articulated value), but to "examine" the listener – how to bring about the inner movement of the soul by the movement of sounds. Therefore, mimesis in the Aristotelian concept of sound movement is quite subtle, not to say limited: it refers primarily to all internal movements, while not rejecting the possibility of evocation of feeling, that is, identification with it by the recipient.

The concepts of the master from Stagira influenced and still act in time and space, their traces can be found in the concept of spheres of Boethius of Dacia or another disciple of Aristotle through millennia, Thomas Aquinas, who, founded on the doctrine of radical realism, will determine the truth of the sensual approach to feelings (*passiones*) and emotions (*affectus*) as an inner movement flowing from things, but on different levels. Thomas understands feeling as a simpler movement of the faculties of sensual desires by imagination, which is simpler than emotion. [40]

1.3. Strategies for interpreting the movement of sounds as cultural categories

1.3.1. Semiotic and acoustic concepts on the example of Johann Gottfried Herder's thought

Comparing music to the human experience of movement, as Ewa Schreiber claims, is a successful conceptual metaphor read at the junction of perception, tradition of thought (philosophy, aesthetics), the concept of μίμησις [mímēsis], cognitive science, the problem of language and many others. [41] This metaphor is so colorful and universal that it has been

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[40] A. Andrzejuk, *Swoistość sfery afektywnej w ujęciu Tomasza z Akwinu*, [in:] *Rocznik tomistyczny*, t. 1, 2012, p. 123 and next.
[41] E. Schreiber, *Op. Cit*.

adopted as one of the basic paradigms of thinking about music together with the concept of space. Schreiber points out that due to the experience of double intentionality, basically everything that humanity can say about music – including its seemingly purely musical parameters – is dressed in a conceptual grid characteristic of these two paradigms.[42]

The approach to the dependence of descriptive acoustic categories expressed in language on thought and, more broadly, cognitive experience is part of the thinking of Johann Gottfried von Herder, the Enlightenment continuator of Jean-Jacques Russeau's thought, as well as the founder of romantic thought about meaning and language (having a direct influence on Johann Wolfgang von Goethe and Arthur Schopenhauer, to whom the aforementioned Hanslick referred). Ernst Cassirer (which seems to be a very flattering opinion) wrote about Herder that he was a true philosopher of humanity, looking for pure humanity in his concepts (categories of language, thought, translation, music). [43]

1.3.1.1. The concept of the relationship between linguistic (and non-linguistic) structures and thought – in the theory of language, mind and interpretation

For Herder, the double intentionality of description is expressed both in the manifestation of faith in the expressive superiority of free speech in relation to written word, which is bound by a grammatical-lexical "straitjacket"[44], but also in the disclosure of the problem of the slavery of thought to its expression in language. **At the same time, the philosopher emphasizes that any type of thinking that separates thought from will and affect is wrong.** By the way, it should be added that for Herder it is music that is the peak of man's expressive possibilities[45], and at the same time it realizes the problems of both language and translation or mind in its own way. **In this sense, Herder's linguistic-cognitive concepts are applied accordingly to this aesthetic concept.** For Herder, music is a form of such free expression, a reflection of genius (which Hanslick later describes as a reflection of the movement of the spirit, or similarly Schopenhauer describes as movement of

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[42] *Ibid.*, p. 105.

[43] E. Cassirer, *Esej o człowieku. Wprowadzenie do filozofii ludzkiej kultury*, transl. A. Staniewska, Warszawa, 1977, p. 104.

[44] M. Froster, [entry:] *Johann Gottfierd von Herder*, branch no. 7 *Aesthetics*, [in:] E. N. Zalta (ed.), *The Stanford Encyclopedia...*, *Op. Cit.* [source:] https://plato.stanford.edu/entries/herder/ [Accessed: 01.05.2023] *NB* Herder's philosophy concerning specific areas of interest (thought, translation, music) is scattered in his various texts, from different periods of his work, and some threads necessarily have to be reconstructed, so demanding particularly attentive critical reading; Due to the lack of both Polish-language and English-language syntheses, I exceptionally use as the main source of knowledge of his philosophy a comprehensive and very well-constructed entry with *Stanford Encyclopedia of Philosophy and Philosophers*.

[45] M. Froster, *Op. Cit.* branch No 4 *Philosophy of Language, Interpretation and Translation*.

the will), and at the same time an expression through *quasi-language*. Objective meaning, determined by language, must necessarily also take into account its opposite—a free, expressive "surplus" (the capture of sensory impressions, the variability of context) — which, according to Herder, is lacking in the conventionalized written word. This freedom frees from the already mentioned "straitjacket".

Herder, with his rejection of a priorism, his systematizing approach limited to the minimum necessary, and his narrow expressionism, avoids the claim that thought expressed by a non-linguistic structure (e.g., a sculptural or musical structure) must be derived from linguistic expression. He illustrates this by putting in the theory of language an **equivalence between thinking and language, meaning and the structure of words**, which he expands in his aesthetic concept, namely that **non-linguistic art is dependent on thought also in such a way that it not only expresses thoughts, but also assumes them in the perception of the recipient**. [46]

The dependence of thinking on the existence of language and the existence of linguistically describable phenomena, tracing trajectories, patterns (clichés) and automation is conceptually related to perceptual and affective experiences – **impressions are the source and basis of all concepts, whether empirical or non-empirical (although metaphorically developed from empirical).** The famous and oft-quoted assumption of David Hume that "humanity is the same in all times"[47] Herder perfects comprehension by pointing out that experientiality transcends concepts, beliefs, values, historical periods, and cultures if the process of translation (as a special kind of interpretation) is properly carried out. This should take place without all one's own convictions, beliefs, own thoughts, and even understanding, but in such a way as to (1) precisely establish linguistic rules defining the proper meaning and (2) based on the sensory reproduction of one's own impressions (perceptual and affective) to obtain the source immediacy of the message (including understanding and reconstructing the feelings of the source author).

Herder's hermeneutical and translation process is, on the one hand, objective (an objective interpretation of source objectivity, "rather similar than different from the natural sciences"[48]), and on the other hand, it deeply takes into account the necessity of "divination" (a subjective interpretation of source subjectivity – a radical mental difference). Herder recognizes that it is impossible to achieve absolute **semantic fidelity** (absolute compatibility), but rather accommodation, a kind of "looseness", "freedom", making a "parallel" aimed at semantic **accuracy** (careful, caring, with a high degree of conformity).

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[46] *Ibid.*
[47] D. Hume, *An Inquiry Concerning Human Understanding,* P. Millican (ed.), Oxford, 1955, p. 60.
[48] M. Froster, *Op. Cit.*

Translation for Herder is not only the reproduction of the meaning or capture of the conceptual and musical form of a literary text, even if it requires the translator of "genius" to re-create these forms in a new language, following the path set by the source author.

As I mentioned, Herder's reflections on interpretation and translation (and partly also on the philosophy of mind, in the field of perception), dedicated by the philosopher to the linguistic arts, and by virtue of his theory of thought (balanced with language, and entailing the necessity of hermeneutics) indirectly (as derivatives and limited by the expressive capacity of the artist) are also attributed to non-linguistic arts. The very essence of the problem of the linguistics (or not) of music is not the philosopher's main interest, especially since the need to define the rules of language would require systematization, from which he avoided. More important in Herder's work is rather the premonition of the **communal character of perceptual perception (including, for example, sound structures as movement) shaped in fact by language, meaning, and perhaps also culture.**

When talking about Herder's approach to the movement of sounds as a hermeneutical category, two areas should be mentioned:

(1) the concept of song not only as a synthesis of the text and the sound of music, but originally a uniform gesture, not separated by the traditional division between poetic music (conveying ideas) and instrumental music (not transmitting them);[49]
(2) reflections on the nature of musical experiences in themselves in the psychoacoustic aspect (resonance and tone) as synthetic experiences.

1.3.1.2. The song as a uniform gesture

While the structure of thought is the same structure as language, this logical consequence does not apply to non-linguistic arts, which have their own logics and means of expression – this parallel is therefore limited to the aspect of intelligibility (thanks to the use of conventional formal strategies and that meaning has been developed on the basis of language both as a reflective representation and perceptual perception and its description) as well as meaning.

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[49] *Musica Antica*, *Musica moderna*; *Prima Pratica*, *seconda Pratica*; absolute music, program music – based on a discourse as to the scope of emancipation of sound constructions stretched between the communicativeness of ideas (as Moraczewski notes, relevance) and sensory experience (pure hedonism), as well as the separation of shaping orders (purely musical and poetic).

Herder says of the song that it is the source of all **language (and consequently of all thought)** – direct in the text and direct in the senses. Therefore, the song is a primordial semantic gesture, reminiscent of a unified act of speech (Rousseau will say that with syntactic, grammatical, semantic, structural and intonation content; Herder will seek expressive, reflective and figurative value in the conjunction of speech and sound). [50] In this sense, Herder adheres to the Greek ideal of the triune χορεία *[choreía].*

An example of an expressive value present in music itself (which does not necessarily need poetics for this) and basically understandable is to be the *casus* of speech of "man already as an animal" – all their psychophysical reactions, especially those violent, passionate and painful, are expressed in a wild, inarticulate cry – and *a casus* a string struck – ringing and calling echoes, even if no other string responds to it. This primordial expressiveness of sounds was similarly described in Philippe Tagg as a category of anaphones, sound analogies to sonic, sensory, somatic and kinetic (sensual!) human experiences. [51] His concept agrees with Herder's assertions about the figurative value of music: the function of the semiotic representation of objects of expression – translated or transformed – thus referring to the senses of the recipient retaining its original, sensual character.

Moraczewski also notices in Herder the value of Peirce's infinite semiosis (although he does not call it that) – since music has a figurative character (which results from the consequences of dependence on language, and therefore thought) and is a form of metaphor, it can be inscribed "**in a series of conventionalized, but developing, improving and increasingly complex metaphors, whose figurativeness has blurred over the course of long-term use**".[52] This is not only a reference to infinite semiosis, but also to the value of naturalization of cultural categories. In this sense, the emancipated purely sonic metaphor "illuminates" (reconstructs) fragments of the original meaning of the metaphor, when it was still in the original unity with poetics (and poetics was originally even more sensual than intellectual). What's more, it can also highlight those moments in which the linguistically expressed have their serious shortcomings (as Moraczewski notes, especially in the description of super-individual, unique phenomena and supergeneral, absolute phenomena).

This leads to the conclusion, which Herder seems to confirm, that both linguistic and non-linguistic thoughts need their own hermeneutics. Even within non-linguistic fields of art

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[50] K. Moraczewski, *Muzyka instrumentalna i język. Stanowisko Herdera w osiemnastowiecznej debacie muzyczno-estetycznej*, [in:] *Prace Kulturoznawcze*, t. 25, nr 1, Wrocław, 2021, pp. 42 and next.
[51] P. Tagg, *Music's Meanings: a Modern Musicology for Non Musos*, New York, Huddersfield, 2013, p. 485.
[52] K. Moraczewski, *Muzyka instrumentalna…*, *Op. Cit.*, p. 43. [translation after Moraczewski done by myself].

that cannot be reducible to each other, hermeneutics will avoid obtaining metaphors that are inaccurate or inexplanatory, especially since sensory contact causes the individualization of sound experience and its reception, while Herder places perception highest in the hierarchy of structural issues of a musical work (even above *corps sonore*, embodying the concept of Leibniz monads). "The composer does not arrange linguistic generality, but is something like a director of idiosyncratic experiences." [53] For Herder, every possible human sensory perception, including the perception of music, is linguistic. Moraczewski, reconstructing Herder's position, adds: **"We need one hermeneutics with common principles, this hermeneutics covers the entire field of art. There are no artistic expressions (statements) that are not subject to it."**[54]

1.3.1.3. The concept of synthetic (monadic) properties of acoustic categories

Herder's study of the nature of these idiosyncratic musical experiences is founded in the eighteenth-century but also earlier (expressed in Athanasius Kircher, for example) search for a framework for reducing music to a single overarching principle not only encompassing the study of music, but also compositional practice. Kircher organizes his perception of music with the phenomenon of magnetism, Jean-Philippe Rameau with the concept of *corps sonore*. According to it, all harmony has always been contained in the sounding body of a single note containing the harmony of aliquots hovering above it. In contrast to Rameau, constructivist, structuralist thinking, Herder is looking for a concept focused on sensory stimuli – **monades**. Therefore, he argues that the art of music is not bound in the primacy of melody or the government of harmony, but in a powerful influence on the listener, and thus on musical perception. Sensations are never unreflective (indeed, exortiary reflections have their linguistic origin) and it is impossible to separate impression from knowledge and judgment, and experience logically necessarily implies cognition. For Herder, then, aesthetics is the science of human perception – to recognize a thing clearly, even in the slightest, means that it is distinguished, distinguished, distinguished without judgment, and judgment itself occupies the last place in this "ladder" of aesthetic cognition. [55]

The separation of the whole is an act of internal action of reason (reflective, and therefore mental, and therefore linguistic), based on experience. That is why Herder in his

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[53] *Ibid.*, p. 49 i d. [translation after Moraczewski done by myself].
[54] *Ibid.*, pp. 56-57. [translation after Moraczewski done by myself].
[55] J. G. Herder, *Werke*, W. Pross (ed.), vol. 2: *Herder und die Anthropologie der Aufklärung,* Munich, 1987, p. 142 [after:] E. I. Dolan, *The Idea of Timbre in the Age of Haydn*, Ithaca, 2006. [unpublished work]

time did not find a true aesthetics, looking for the main principle not as a speculative, constructivist issue (perceived, for example, by Rameau as harmony, which for Herder is a completely primordial and natural musical phenomenon), which in the slightest degree does not explain the influence of music on the soul. **Only such a hermeneutic can be the beginning of the study of music and about music.**

Herder evokes *a casus*: if chords were the natural result of the resonance of sounding strings, as Rameau thought they were, it would be impossible to understand why and how tone affects human perception. [56] The philosopher, therefore, distinguishes resonance and tone from each other. The former is a kind of complex acoustic phenomenon, more natural, mathematical, technical (including chords, aliquots), while the latter actually belongs to the sphere of aesthetics (oriented to the study of perception). The basis of all music is the Leibniz first moment of experience, "Now where there are no parts, there neither extension, nor shape, nor divisibility is possible." [57] Therefore, for Herder, *ars combinatorica* of tones is not only a contrapuntal constitution of melody, but a "pitched accents of passion".[58] All pitch successions, sequences, progression are focused on the result of hedonistic pleasure in the ear, and by its influence on the soul they become a melody that is far more than the resultant of the graph of intensity (dynamics), pitch and time.

Herder notes that **naming the perceptual influence of sounds goes beyond the technical language of music, using a conceptual, empirical, sensational grid of language** (juxtaposing the antitheses of roughness and smoothness, strength and weakness, gloomy and bright, awakening and sleeping). [59] In this sense, tones "tune" the monochord of the soul and mind by "playing" by external forces and "fine-tuning" the strings of thoughts through specific affects or participation in what surrounds the recipient. Therefore, Herder rejects the idea of a ocular harpsichord, he would probably also reject Olivier Messiaen's stained glass synesthesia, or Alexander Scriabin's *clavier à lumières*, ranking more in the perception of Schoenberg's *Klangfarbenmelodies*, appreciating the plastic aesthetic value of tone timbre.

Assuming the individuality of the reception of music, Herder argues that no instrument is analogous to the instrument of the human mind, to the human inner nature. What is interesting for a philosopher in the aesthetics of music is above all **the internal reaction to emotional vibrations and passions tormenting the recipient listening to music**. Clarifying his theory of the figurativeness of music, he points out that sounds cannot illustrate

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[56] E. I. Dolan, *Op. Cit.*, p. 156 and next.
[57] G. W. von Leibnitz, *Monadology and Other Philosophical Essays*, transl. P. Schrecker, A. M. Schrecker, New York, 1965 [after:] E. I. Dolan, *Op. Cit.*
[58] E. I. Dolan, *Op. Cit.*, p. 146.
[59] *Ibid.*, p. 147.

things, because each person reacts differently to a given tone. However, he excludes one exception from this statement – he notes that there are certain communities of phenomena affecting listeners identically (e.g. making everyone sad). [60]

Using Herder's earlier reflections on the relationship between language and thought and music, it is not difficult to guess that these are figurative sound metaphors used, which (as in semiosis) are shaped into sequences and move away from their original linguistic and sound meaning. When a metaphor within a sequence "approaches" the original marked object, it seems that, according to Herder, it is then able to influence a wide group of listeners who may differ in concepts, beliefs, values resulting from different historical periods, cultural background, and even their own individualism. Differentiating can be, for example, style or genre (as a conventional set of rules and rules of form). The connecting factor will be the fact of being human, i.e. imprinted linguistic determinism of thought and access to certain original own expressive forms, including some figurative ones.

1.3.2. Semiotic concepts

1.3.2.1. Intersemiotic translation

The theory of translation (as work of translator), translation (as work of interpreter) and transcription has a very rich methodological background, especially in the field of language sciences (although some fields, such as music, are very reluctant to know and skillfully apply these concepts – not only a nomenclatural, but also self-aware or even legal problem of artists performing creative activities such as: development, adaptation, arrangement, rearrangement, transcription, harmonization of existing works). In recent years, an important issue in the field of language and cultural sciences has become the study of intersemiotic translation, Roman Jakobson's proposal to distinguish intralingual, interlingual and intersemiotic translations, [61] the latter phenomenon mentioned not limited only to the interpretation of linguistic signs using linguistic signs, but also the interpretation of linguistic signs using non-linguistic signs of semiotic systems (which would not be a simple complementarity), which opens the possibility of applying this concept to a wide spectrum of cultural areas, ranging from literature (both poetry, drama and prose), but also comics, film and series, video, video games, dance, performance, theater, sculpture, graphics, painting,

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[60] *Ibid.*, p. 160.
[61] R. Jakobson, *On Linguistic Aspect of Translation*, [in:] *On Translation*, 1958.

installations, textiles, clothes and styling, and finally Morse code or music. As we know, each of these areas has developed its own "poetics", or more precisely, a system of supreme organizational principles – both formal and even dramaturgical, technological, etc.

Already in the cited views of Herder there was a clear conviction that translation is not only about reconstructing the reference message in a new language (in this case, a system of signs), but about creating new relations (which generates a new language with its own "poetics") in a creative way, establishing in principle a new, although dependent on the original source, work of art – able to expand or improve (but also the opposite!) the understanding of the source text. Hence, Herder draws attention to the need for the translator to have high competence, or even quality of being a "genius", to carry out such a correct translation – not only by recreating the rules of meaning and language, but also by reproducing the impressional properties of the source text. Referring to Herder, Haroldo de Campos, writing about intersemioticisms, noting that **not only what is marked, but also the sign itself (the tangible sign of the sign itself, with all its morphological materiality – visuality, sound) is subject to translation**. [62]

Therefore, translation is not equivalent to the source text; on the contrary, it transcreates a multi-level system of relations within the processes belonging to different, multi-level and mutually limiting semiotic systems that occur in this work – through interpretative action, reconciling what must be sacrificed (profit and loss relation) – in order to be able to make an effective, consistent with the translator's assumptions mapping of the original message. [63] Hence, it is popular in Polish to distinguish between "tłumaczenie" (translation as high fidelity transfer) and "przekład" (translation as interpretation): translation takes into account a wide range of relationships, forcing the translator in the first sense to a higher level of discipline and thus creative "filtering" by his sensitivity, while translation in the second sense offers the translator much wider room for maneuver and freedom, allowing him to narrow the translated layers of relations and thus creative "filtering" by his sensitivity.

Intersemiotic translation thus includes two basic actions: [64]

(1) transcreation of a multi-layer system of relations between mutually limiting layers of the source of the sign (semiotic output system) and the purpose of the sign (semiotic target system);

(2) Iconic mapping between descriptive layers from source to target character.

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[62] J. Queiroz, D. Aguiar, *C. S. Peirce and Intersemiotic Translation*, [in:] P. Trifonas (ed.), *International Handbook of Semiotics*, Dordrecht, 2015, pp. 202-203.
[63] J. Queiroz, D. Aguiar, *Op. Cit.*, p. 204; *Cf.* A, Gawarecka, (ed.), *Intersemiotyczność*, [in:] Poznańskie Studia Slawistyczne, No. 2, 2012; M. Kaźmierczak, *Od przekładu intersemiotycznego do intersemiotycznych aspektów tłumaczenia*, [in:] *Przekładaniec*, nr 34/2017, pp. 7-35.
[64] J. Queiroz, D. Aguiar, *Op. Cit.*, pp. 213-214.

One method of explaining the phenomenon of intersemiotic translation is Charles Sanders Peirce's **theory of signs**[65], [66]. He clearly distinguishes "*common sense*" (despite the fact that it is extremely subjective, relative and individualized in inferring phenomena not only from other people, but also from oneself) by contrasting it with everything speculative (metaphysical). Thanks to the fact that everyone perceives phenomena subjectively, blurring the distinction between fiction (an object with features dependent on judgments) and reality (an object with features independent of judgments, external to the mind, although founded on the concept of community – affecting the senses with certain regularities that allow us to know things), it can be said that people can live in different worlds, or at least spaces.[67]

> "[...] Sense phenomena are only signs of reality. It is not, however, a reality that is the unknown cause of the eye-data, but *a noumen*[68] or concept that is the ultimate result of mental activities set in motion by the visual data."[69]

Hence Peirce's **idealistic metaphysical theory** states that **a substance is the sum of its properties (manifestations).** Its existence means the possibility of being known, and the world is not a collection of unchanging individual substances, but a fluid network of semantic relations. Methodologically, the idealistic metaphysical theory is identical with Peirce's **pragmatic maxim** that the notion of **an object is identical with the notion of the effects it produces**. For this reason, the manifestation of an object (sign) can be identified with the object itself. [70]

Peirce distinguishes between types of signs according to their morphological differences and the way in which the habit embodied in the object is conveyed to the interpreter (which limits the interpreter's behavior[71]):

(1) **icon**: as a result of the presence of a certain characteristic common to the sign and object ;

(2) **index**: as a result of the direct physical interaction of the sign and the object and as a cause-and-effect result;

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[65] Although neopositivism (including the theory of meaning) is currently widely criticized, the pragmatic maxim Peirce It should not be associated with the neo-positivist theory of meaning, because it is basically an extreme form of idealism. The reason for the criticism of neo-positivism is Empiricization all leading to the undermining of the sense of philosophy and some scientific theories in general. *Cf.* . Tokariew, *Charles Sanders Peirce. Między logiką a metafizyką*, Kraków, 2017, p. 107.
[66] *Ibid.*
[67] *Ibid.*, p. 62.
[68] *νοούμενον [nooúmenon]* – Kant's "thing in itself".
[69] C. S. Peirce, *W 2:470*, 1871, [in:] S. Tokarev, *Op. Cit.*, p. 81. [translation after Tokariew done by myself].
[70] S. Tokarev, *Op. Cit.*, p. 83 and d.
[71] *Cf.* J. Queiroz, D. Aguiar, *Op. Cit.*; K. Guczalski, *Znaczenie muzyki, znaczenia w muzyce. Próba ogólnej teorii na tle estetyki Susanne Langer*, Kraków, 2002, p. 50 and next.

(3) **symbol**: as a result of the correctness of the relation between the sign and an object, law or rule.

An aesthetic sign subject to intersemiotic translation (as a form of careful reading) is above all **iconic – inseparably connected with the object, it is an analogy (representation) of its own composition, formal, structural or material nature**. At the same time, iconicity allows us to make new discoveries about the subject of the sign by observing the features of the sign itself (which allows for effective surprise – *see* chapter 3.2.4). The prominent role of the sign is the starting point for the process of endless semiosis.

1.3.2.2. Infinite semiosis

Classically, Peircean semiosis (action on signs) is presented as an irreducible relation of the triad model:

object (O, in polish also: obiekt, przedmiot) – sign (S, in polish also: znak, reprezentant) – interpretant (I, in polish also: interpelant, podmiot).[72]

The triad is an irreducible to simpler relationship process of interpretation. It can be read as a medium for communicating to the interpretant the form (i.e. the regularity of the disposition) contained in the object (from the object through the sign). Communication understood in this way within the triad concerns the communication of form from the object to the Interpreter, which causes a limited set of effects (effects) of the object on the interpreter through the sign. In this sense, the transfer of knowledge takes place through signs. The interpretant is sometimes referred to as *a quasi-mind*, but it does not have to be related to the human mind, rather it corresponds to the interpretive context in which semiosis occurs. [73] Therefore, sometimes the interpellant is referred to as a sign of a secondary nature, produced by the recipient as a result of the perceptual experience of the material carrier of the sign and being a reflection of the way it is understood. It is, therefore, a form of conceptual imagination and at the same time, I think, a sense image.[74]

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[72] J. Queiroz, D. Aguiar, *Op. Cit.*, p. 206 and d.; Tokarev translates this structure as an "przedmiot-znak-podmiot". *Cf.* S. Tokarev, *Op. Cit.*, p. 69 and next.
[73] J. S. Arias-Valero, E. Lluis-Puebla *A Conceptual Note on Gesture Theory*, [in:] *Journal MusMat*, vol. 5, no. 1, 2021, pp. 91-92.
[74] Guczalski proposes, furthermore, that the extension of Peirce's a triad about the (so far default) recipient, e.g. in the approach derived from Susanne Langer's aesthetics and theory of meaning due to convergence Peircean interpretant with Langerian Concept. *Vide*: K. Guczalski, *Znaczenie w muzyce…*, *Op. Cit.*, p. 50 and next. For me,

A piece of music can be symbolically represented as:

O: sounds – S: score (or any other way of fixation) – I: conceptual-sensory image and psychophysical human reaction.[75]

Due to the use of intersemiotic translation in the context of Peirce's semiosis, the translation process can be presented schematically as follows.

The subject of the sign is the source, the translated object reveals new information about the source, filtered by the sensitivity of the interpreter, who is the target (perceptor) of the semiotic process (**1st intersemiotic interpretation of semiosis**):[76]

O: the original manifestation of the translated sign – S: the structure of translation (into the "poetics" of the work) – I: the goal of semiosis.

As part of my piece *visibilium et invisibilium,* an example of the application of the process of semiosis is:

O: - S: - I:

physical "sting" of matches   sound structure   conceptual-sensory

revealed in   image

Schlieren Optics[77]   of the composer

Graph 1. Example of 1st intersemiotic interpretation of semiosis.

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on the other hand, the reflexive is the need to broadly outline the context (yes, resulting from O, S, I, but at the same time "default"). Therefore, the specific triad of semiosis will always be coupled with others, which together will specify the scope of the relationship. Context always relational, preposterially It explains, I think, the sign, or at least determines its effectiveness.

[75] It should be noted that Ingarden, it seems to me, would argue with such a statement, but I leave it here. *Cf.* R. Ingarden, *Utwór muzyczny i sprawa jego tożsamości*, Kraków, 1973.

[76] J. Queiroz, D. Aguiar, *Op. Cit.*, p. 207.

[77] "Schlieren photography is an optical technology that can photograph the flow of fluids of varying densities, which is used to record regions of different refractive index in a fluid, and is especially used to visualize the flow of air around objects. Schlieren flow visualization is based on the deflection of light by the flow density gradient, so gases in the workplace with different densities or temperatures can be observed. The classical optical system consists of a parabolic or spherical mirror, a light source, a knife edge placed at the focal point, and a camera. These simple optical elements can generate instantaneous density profiles with images. [...] The light moves onto or off the knife edge, resulting in a darker or lighter region in the image, respectively. The deflected light is compared to undeflected light at a viewing screen. The light that is deflected toward or away from the knife edge produces a shadow pattern depending upon whether it was previously blocked or unblocked. This shadow pattern is a light-intensity representation of low-density regions and high-density regions which characterize the flow.. [...] Schlieren photography can be used to visualize the movement of gases released from an industrial process with different densities to the ambient air, but only when the gases themselves are transparent. Refractive index gradients can be caused either by changes to temperature or pressure of the same fluid material or by variations in the concentration of components in mixtures and solutions." Z. Cao, Y. Huang (*et al.*), *Experimental Techniques* [in:] H. D. Goodellow, Y. Wang (ed.), *Industrial Ventilation Design Guidebook*, vol. 2, 2021.

Translation of the material output "object" – in this case the physical act of striking light from a match, taking place in specific dimensions (Euclidean) of physical space, with a definite duration and clearly defined phases, also having sensory elements (kinetic, somatic, purposefulnes and audial) – on a sign – operating musical dimensions: pitch-time, timbre, intensity, and purposefulnes vector – was made by the interpreter (by myself, present by default in this scheme) in accordance with the interpellatant, that is, my perceptual image of this activity (as a continuous action, leading to a change of state). In this sense, the interpellation is the goal of semiosis – it organizes its stages, gives it direction, is the "key", the choice of the path and *tertium comparationis* in the process of translation between different semiotic systems.

Infinite **semiosis consists in successive transformations of the sign (S) into the object (O),** which is why the elements of the triad, along with their iteration in the process, giving way to other categories, can be treated quite freely – they can be things, concepts, signs. In a sense, the designations O, S, I can become mutual transmutations within the spiral of infinite semiosis. Then these triads will be reducible to lower-order dependencies, until the "source" irreducible triad of semiosis is established, in which the actually existing object was first marked with a sign and read by the interpreter.

Again, due to the use of intersemiotic translation in the context of Peirce's semiosis, the translation process can be described as a "higher" form of interpretation in relation to the schematic representation presented on the previous page (**2nd intersemiotic interpretation of semiosis**):[78]

A sign is a source as a new object, it is intended to convey possible new information and to influence the interpreter.

O: structure of translation – S: semiotic purpose – I: concrete effect exerted on the recipient.

An example would be (in relation to the scheme from the previous page):

O: - S: - I:

sound structure   conceptual-sensory   recipient
composed on the basis of   image   psychophysical reaction
physical object   of the composer

Graph 2. Example od 2nd intersemiotic interpretation of semiosis.

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[78] J. Queiroz, D. Aguiar, *Op. Cit.*, p. 207.

The originally separated sign, which is the structure of translation between semiotic systems (now becoming the object of semiosis), together with the "key" of its achievement, i.e. the interpreter (as a new sign) is subjected to the perceptual "judgment" of the recipient, that is, what effect (mental image, psychophysical reaction) is exerted on it. In this sense, the new interpellant is the new goal of the new semiosis – the elicitation of a (supposedly definite) reaction.

It seems, therefore, that the process of translation carried out in such a way that there is a correlation of composing grammars and listening grammars is always at least two-stage, or better said, consists of two interconnected processes. Generation of subsequent versions of the same source object can occur simultaneously (at the same hierarchical level).

Only by using the pragmatic maxim, transforming the reaction of the recipient (interpellant of lower-order semiosis) into a sign of a higher-order semiosis (e.g. by combining semiosis variants at the same hierarchical level as the sum sum) a new interpellant is obtained (a sense of the emergence of a new value, a new quality). From this I conclude that the process of infinite semiosis takes place on two planes – horizontal and vertical. The ability to persuade the recipient to perceive the relationships between successive steps (causing a psychophysical reaction in him) will guarantee the actual transformation of the theoretical possibility of infinite semiosis into a practical result.

One more remark is necessary here, namely the phenomenon of embodied cognition allows to define semiosis as not necessarily a conscious action (the source object may be "hidden" from the person translating due to the automation of certain reflexes, schemes, perceptual scripts, reactions as a result of action equivalent to reacting to the action itself).

For this reason, Victoria Welby notes that the processes of semiosis are actually a form of *Inter-translation*, reflecting the process of interpretation and understanding of phenomena. [79] The processes of semiosis are triadic, iconic (they manipulate the physicality of the sign), interpretative (they transcreate the properties of the source) and depend on the context. It is, therefore, as Campos notes, the release of the phenomenon through translation from the original semantic dimension, forcing the source of the sign to reveal itself at various levels: through the formation of habits of sign manipulations and interpretations. [80] The repetition of this process, the continuous reinterpretation and transcreation of signs no longer

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[79] J. Queiroz, D. Aguiar, *Op. Cit.*, p. 207.
[80] J. Queiroz, D. Aguiar, *Op. Cit.*, p. 213.

as a designation of the source object, but as signs of successive signs in the processes of semiosis leads to infinity.

Translating this into the language of musical understanding: variation work will be a form of infinite semiosis – as a continuous iteration of O, S, I of one's own sound ideas. At the same time, it may also be the case that the sign can be an interpreter of someone else's sound ideas: as a quotation, a reference (both the *case* of Johann Sebastian Bach's fugue on the "royal" theme, given by Friedrich II Hochenzollern, as well as variations on a folk melody, e.g. in *Passacaglia* from *the Concerto for Orchestra* Lutosławski[81]), or the transcreation of more complex ideas (e.g. the psychological aspects of the forms and structure of the Baroque suite or the idea of the concertante at Andrzej Kwieciński's *Concerto. Re Maggiore*, but also the perception of instrumentation as a field of effective and complex "translation" from the "language" of one instrumental cast to another). Finally, it may also be the case that the sound structure is a representation of an earlier concept, but not musical: e.g. an visual arts (*see* the works of Marta Ptaszyńska), a novel (Paweł Mykietyn's *The Magic Mountain*), symptoms of illness (Katarzyna Taborowska's *Chorea*), *etc*.

Here, however, it is worth returning to **the pragmatic maxim**, aimed at achieving the highest degree of understanding of signs, which allows a total of three levels:[82]

(1) Clarity – allowing to recognize the object and enabling its correct use (subjective, perceptual judgment);
(2) Distinctness – allowing to recognize the definition of the object (technical, objective enumeration, categorical judgment);
(3) Effects – a body of knowledge about the results that the object can produce (hypothetical judgment).

According to Peirce's assumption of the identity of the manifestation with its effects, it is logically possible to translate a categorical judgment into a hypothetical proposition, and thus to make it possible to carry out an infinite semiosis. This can be illustrated by the following two examples:

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[81] *Cf.* J. S. Arias-Valero, E. Lluis-Puebla *Op. Cit.*, p. 92.
[82] S. Tokarev, *Op. Cit.*, p. 82.

(1)

O: Smooth transition between one pitch and another in time, noted as S:
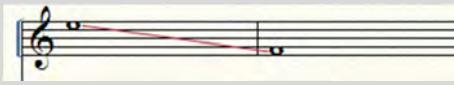
=methodologically= **O**: psychoacoustic response of

hearing a prolonged falling sound, notable as **S:**.

Graph 3. *Glissando*. Illustration of example (1).

Peirce's pragmatic maxim confirms the assumptions of Trusslit's experiment already mentioned. The methodological axis of analogy runs along the competence compatibility of both entities.

(2)

An example of semiosis carried out gradually through iconic transformations and drawing logical consequences from a pragmatic maxim: inhalation-exhalation = whistling of air rising and falling = change of silhouette arrangement from tense to relaxed = Tension-relaxation = instability-stability = dissonance-consonance = harmonic sequence cadence(dominant)-finalis(tonic) = inharmonic and harmonic spectrum = acceleration-deceleration = intensification of sound action-thinning = Shepard Tones = [...] = *glissando*.

*   *   *

Becoming aware of the Peircean type of thinking allowed me to organize the principles of constructing the "grammar" of *visibilium et invisibilium*, including the creation of gestures and their transformation. In this sense, the process of precomposition was devoted to establishing a dramatic axis and conceptualization, and consequently to the search for gestures that would favor both processes. Since one of the first *sui generis* assumptions was to use *Schlieren Optics* imaging apparatus as the "primordial source" of gestures (and even specifically one gesture: the extraction of a sound wave, its visual "exit" from the instrument, revealed in imaging apparatus), my conceptual, expressive, but also purely sonic intentions had to be coordinated with the physical capabilities offered by the apparatus, but also with the search for contexts, in which can be embedded. Ultimately, also what I physically performed using the apparatus (due to the high sensitivity of the elements that make it up, making it impossible to use it in the form of a live video during a concert and the need to record it in the form of *fixed video* beforehand) was also taken out of its original context. Detailed information about gesture transformations and their contextualization – later in the dissertation.

1.3.3. Concepts of generative grammar – Noam Avram Chomsky, *GTTM* by Fred Lerdahl and Ray Jackendoff, Stephane Roy's reinterpretation

Recalling Herder's theory of language and translation, as well as intersemioticism and Peirce's semiosis, it is impossible not to refer to a particular grammatical complex, namely the generative grammar of Avram Noam Chomsky, "a linguistic theory that understands grammar as a model of human linguistic competence in its 2 basic manifestations: **the ability to produce and understand the correct text in a given language**".[83] The assumption that language is an infinite set of sentences (potentially infinitely long), the generation of which is based on syntactic models (in their essence hierarchical; not only syntactic, but also phonological and semantic) having on the one hand material (determined by the structure of the mind), explicitte (clearly formulated), native (available to every human being from the moment of birth, biologically determined), transformative (continuous process of transforming simpler constructions into complex ones enables the infinity of the system) and at the same time universal (common to all human languages). [84] For Chomsky, language is a mental phenomenon, although its main function is not a communicative function. The disclosure of grammatical phrasal structures in Chomsky's theory occurs through the use of characteristic tree-oid graphs revealing the systemic hierarchy of the analyzed sentences, especially the levels of their structure: deep structure (semantic-logical layer) and surface structure (phonetic-physical layer).

At the same time, interestingly, Chomsky's concept has already been creatively implemented and adapted to the needs of music analysis in the concept of the so-called **generative tonal theory of music (*GTTM*)** expressed in the publication of Fred Lerdahl and Ray Jackendoff *A Generative Theory of Tonal Music* and its development in a more universal direction by Stephane Roy. As a heuristic theory, taking into account the hierarchical dimension of musical construction, it is at the same time aesthetically inductive, starting from the description of musical intuitions of listeners constituted in cognitive psychology, which appear during reception and model cognitive mechanisms. [85]

GTTM's generativity does not mean that from a finite number of elements (procedures and codes) it is possible to generate infinite (potentially infinitely long) songs.

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[83] [entry] *generatywna gramatyka*, [in:] *Encyklopedia PWN* [source: https://encyklopedia.pwn.pl/haslo/generatywna-gramatyka;3904773.html [Accessed: 01.05.2023]. [translation after Encyclopedia done by myself]
[84] N. A. Chomsky, *O naturze i języku*, transl. J. Lang, Poznań, 2005.
[85] F. Lerdahl, R. Jackendoff, *A Generative Theory of Tonal Music*, Cambridge, Massachusetts, 1983, p. 1 i next.; S. Roy, *L'analyse des musiques electroacoustique*, Paris, 2003, p. 392.

Generativity means that **due to the universality of generative rules** (compositional grammars and listening grammars, natural grammars and artificial grammars, processing grammars [e.g. "spectralism"] and substitute, permutation grammars [e.g. "serialism"]), the **listener is able to organize musical information into a hierarchical, formally understandable whole**[86].

This universality of generative rules reveals the "two-sidedness" of the medal of each grammar – compositional grammar (a set of rules and restrictions used by the composer) is the opposite side to the grammar of listening (unconsciously used to build a coherent and understandable mental representation of the work) – this is also the basis for the naturalness and artificiality of grammars (what goes beyond the compositional schemes acceptable from the composer's point of view is most likely an incomprehensible sequence from the listener's point of view; What is permutative [somewhat speculative] is rather flat hierarchically [though often intellectually satisfying], while what is processual [perceived as more "musical"] shows a hierarchical depth [although not necessarily intellectually satisfying] for the listener).[87]

Generativity in this sense, departing from Chomsky's position, guarantees the important role of the communicative function provided that the "natural" grammar is placed at the center (the composer should "listen" to his own grammar[88]), although Chomsky also notes that the speaking person is able to build a sentence that he has never built, and the listener to understand what he has never heard[89]. These grammars, on the one hand, are derived from cognitive knowledge taking into account such phenomena as enculturation or naturalization of cultural categories, and on the other hand, they are based on laws and knowledge derived from, for example, physics or acoustics (illusions, etc.).

The procedures of the *GTTM* concept organize the processes of analysis of textural layers, reducing it to a matter of hierarchy based on the criterion of morphological formation. On this basis, Lerdahl and Jackendoff distinguished 56 grammatical rules divided into 4 categories, which show how the process of listening sets boundaries between individuals and how the relationships between these individuals are established, including hierarchical relations.[90] Thanks to this, this "natural" grammar can be at the same time very intellectually complex, as long as it takes into account the spontaneity of the way music is perceived.

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[86] F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 7 i next.
[87] F. Lerdahl, *Cognitive Constrains on Compositional Systems*, [in:] *Contemporary Music Review*, vol. 6, 1992, p. 101 i next.
[88] S. Roy, *Op. Cit.*, p. 401.
[89] This applies to the issues of universal grammar and the creative aspect of language. *Cf.* N. A. Chomsky, *Language and Mind*, Cambridge, 2006; N. A. Chomsky, *Aspects of the Theories of syntax*, Cambridge, 1965.
[90] *Cf.* F. Lerdahl, R. Jackendoff, *Op. Cit.*, pp. 345-352.

However, in this approach, compositional grammar and listening grammar are not able to reflect the conceptual level or, more broadly, the level of Lehmannian-understood relational music – it will be ineffective for understanding the perceptual phenomena of *4'33"* by John Cage or *Pendulum Music* by Steve Reich. The communicative function, therefore, does not concern the symbolic level (especially the metaphorical iconicity, perceived in *GTTM* quite suspiciously, almost utopian), rather tending to perceive sounds *per se* in relation to cognitive experiences. At the same time, the description of *GTTM*, especially the one proposed by Roy, is iconic-oriented in itself, although this iconism is limited to evoking human cognitive experiences – psychosomatic, kinetic.

At the heart of the generative approach is **the issue of stability and instability**: the category of tension and relaxation is the basic criterion for ordering hierarchical levels through the use of a reduction test (the idea of which is already established in the theoretical works on the analysis of Heinrich Schenker[91] or Leonard B. Meyer[92], which are popular especially in American circles). The reduction test in short is an attempt to map the process of listening, ordering sound events into a coherent, hierarchical structure; Therefore, on the one hand, it is based on the principles of grouping, and on the other on the principles of reducing transformations in the work to the most important units. The results of this reduction test conveniently show relationships on tree-like diagrams, very similar to Chomsky trees.

GTTM groups 56 rules of "natural" grammar into 4 division categories:

(1) **grouping structuring**: rules that allow grouping smaller particles in a work into larger hierarchical recursive levels on the principles of proximity or similarity at subsequent, higher and higher levels (e.g. in periodization theory – motif-phrase-sentence-period) and the whole work is the highest layer of this hierarchy (vertically, at all levels);[93]

(2) **metric structuring**: rules establishing a hierarchical structure of times (meters) ordered by the presence of accents;[94]

(3) **Principles of reducing the time-span**: after the implementation of the rules of grouping structuring and metric structuring, it consists in indicating on their basis

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[91] The Schenkerian analysis itself In its most important assumptions, it maintains an ideological connection with the assumptions of Chomsky's generative grammar (although both concepts seem to have developed independently, simultaneously) – especially in the reductive drive to reveal *Ursatz*, as a deep structure. More about this in: J. A. Sloboda, *Muzyczny umysł*, transl. A. Białkowski, E. Klimas-Kuchotowa, A. Urban, Warszawa, 2002, p. 13 and next. Besides, the *GTTM* authors themselves They do not hide with their admiration for Schenker, and their works were created in a recent temporal coincidence with Sloboda's text, in which the author indicated Ideological affinity of both Schenker and Chomsky concepts. *Cf.* F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 111.

[92] S. Roy, *Op. Cit.*, p. 396, p. 416 i n.; F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 106.

[93] *Cf.* F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 41 and next.

[94] *Cf.* F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 68 and next.

(especially the criterion of temporal rhythmic constancy) the most stable units in the work (horizontally, in time; and vertically, at all levels). This allows to determine the hierarchy of significance of "events";[95]

(4) **Principles of reduction of prolongation: the** music stream is divided into structural regions (vertically, at all levels: (a) due to the construction of tension-relaxation, continuity or progress, structural "openness" or "closure" of the unit, and (b) by determining the degree of assignment of units to other units (from dependence to independence).[96]

The grammatical system would correspond to the Sign in Peirce's triad, which *the authors of GTTM* do not hide.
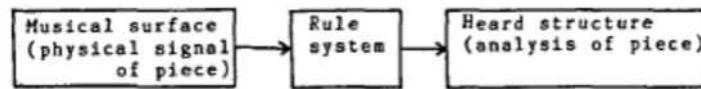
Graph 4. Schemata of a perceptual musical work according to Lerdahl.[97]

GTTM is dedicated to tonal music and is based on the assumption that the triad of basic elements of a musical work: the sound material in the horizontal [pitch] and vertical [harmony] aspects, and the temporal aspect [rhythm] are hierarchical, while the others are not. [98] For this reason, the theory was criticized as impossible to apply to electroacoustic works (Wayne Slawson) [99] or other, according to the creators of "unnatural" (e.g. to a very limited extent to serialism). [100] Cook will define Lerdahl's stance as normative extremism.[101] *GTTM*, in the intention of the creators and under certain conditions, can also be applied to timbre as a grammar (and its proper rules and hierarchical orders), [102] which is also the basis for at least consternation – mainly due to the determination of hard rules for timbre generation, which in itself is bizarre when treating such a fleeting, difficult to describe and analyze element of the musical work.[103]

Despite these problems, the main paradigm set by the universal balancing of what is stable and what is unstable, encourages the search for broad interpretations. This potential of applying GTTM to a wider range of works than tonal, including electroacoustic, was noticed by Roy if the use of the method occurs in the functional range, using a broad

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[95] *Cf.* F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 106 and next.
[96] *Cf.* F. Lerdahl, R. Jackendoff, *Op. Cit.*, p. 125 and next.
[97] F. Lerdahl, *Timbral Hierarchies*, [in:] *Contemporary Music Review*, vol. 2, 1987, p. 136.
[98] *Ibid.*, p. 137 and next.
[99] *Cf.* S. Roy, *Op. Cit.*, p. 413.
[100] *Ibid.*, p. 414.
[101] N. Cook, *Op. Cit.*, p. 241
[102] F. Lerdahl, *Timbral Hierarchies*, *Op. Cit.*, p. 138 and next.
[103] In general, in my observation, the description of the idea of sound is often reduced to a conceptual bag containing anything.

understanding of the category of stability-instability (in the authors of *GTTM* described morphologically as semiosis: consonance *versus* dissonance / distance in the circle of fifths / great perfect cadence *versus* deceptive cadence, etc.), and, in the alternative, other functional "pairs": accumulation-dispersion, acceleration-deceleration, intensification-mitigation, presence-absence, predecessor sequence – successor sequence (question – anwser).[104]

Roy proposes an **open system of triads** distinguished by their ability to induce a sense of: stability – contextually defined indifference (which can function as a stable or unstable element) – instability, and grouping them into three categories:

(1) **Category of orientation** in the flow of musical movement (episodic marker);

(2) **The category of process (**dramaturgy), or rather its perceptual essence (*au general*);

(3) **The category of rhetoric** (in the sense of the basic question-answer function, a certain syntactic function, semantic musical construction, although not in the sense of "container-content", but more descriptive "poetics").

Basing his position on stable and unstable elements, Roy simultaneously formulates a hypothesis: the **hierarchical analysis of simultaneous elements is the analysis of unstable elements, leading the main role in the hierarchy**.[105] Analysis of stable elements (background) would lower the analytical value by not taking into account unstable elements (objects). In addition, Roy sets on the basis of and on the model of *GTTM* grammatical rules (not afraid to exclude some as too attached to tonality) a set of his own rules, useful for the analysis of electroacoustic creativity as well.[106]

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[104] S. Roy, *Op. Cit.*, p. 418.
[105] *Ibid.*, p. 418 and next.
[106] *Ibid.*, p. 422 and next.

INSTABLE **À DÉTERMINER** **STABLE**

Catégorie d'orientation

Déclenchement	Introduction	Conclusion
Interruption	Transition	Extension
Suspension		Prolongement
Appoggiature		
Engendrement		

Catégorie de processus

Accumulation	Profil spatial	Dispersion
Accélération		Décélération
Intensification		Atténuation

Catégorie de rhétorique

Appel ? A	Annonce	Réponse
Variation	Réitération	Rappel
Anticipation	Indice	Thème
Déviation		Affirmation
Parenthèse ( )		Imitation
Articulation		Rupture
Rétention		
Antagonisme simultané		
Antagonisme successif		
Spatialisation		

Graph 5. Categorization of unstable, stable and contextual structures according to Roy and their symbolic notation.[107]

It is impossible not to notice that the similarity of theoretical and methodological assumptions (perhaps with the exception of the need to define grammar rules) and conclusions flowing from it resembles the spectromorphological concept of Denis Smalley and modified by Roy GTTM method (which will be discussed in more detail in the next chapter), especially in relation to his classification of the trajectory of sound movements.

To define the forms of movement and its transformations, Smalley establishes a describable "sound life cycle"[108] (onset, continuant, termination) and **a typology of motion**

(linear – unidirectional, bidirectional, multidirectional, curvilinear: centric and reciprocal). He considers describing trajectories with metaphors of movement and growth as directional categories necessary to maintain due to the temporal and cognitive mode of perception. The traditionally understood description of elements (as musical processes, without referring to their perceptual aspects) is meaningless because it is not enough to describe the expressive-dramatic qualities of the work: gestures and the quality of movement inside textures, which can only be captured by various "shaded" spectromorphologies using this doubly intentional metaphorical character. Jacek Targosz's description of harmonic motion – centrifugal (subdominant) and centripetal (dominant)[109] motion – can be transferred to a higher level, trying to answer the question how the relations of these movements affect the general shape of movement, conventionally speaking, of a higher order – rotary, vortex, pericentral. Therefore, Smalley draws attention to **4 perceptible elements of the shape of the musical movement**[110]:

(1) **Motion rootedness:** whether the movement tends towards its "root" or not, the quality of the bond with "rooting" (flight, drift, float) can be distinguished;

(2) **motion launching**: on which spectromorphologies the motion is based, dynamic or static (gestures and textures);

(3) **energy and inflection**: what is the direction, intensity of trajectory, fluctuations in space (also spectral; evolving, slow, stabilizing, etc.);

(4) **Internal texturing**: is it possible to assign the feature of continuity or discontinuity determined by groupings of movements, to higher-order movements (presence of elements such as cycles, repetitions, pauses).

Smalley's approach refers to a category relevant to *GTTM* – namely stability and instability – indirectly. Rather, it focuses on the "shading" of the relation to the direction, the purpose of the movement, perceived on the platform of different understandings of "spatiality" and hence distinguishes many categorization proposals (of an open nature).[111]

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[108] D. Smalley, *Spectromorphology: Explaining Sound-Shapes*, [in:] *Organised Sound* Vol. 2, No. 2, Cambridge, 1997, p. 112.
[109] J. Targosz, *Podstawy harmonii funkcyjnej*, Kraków, 2004, p. 29 and next.
[110] D. Smalley, *Spectromorphology: Explaining..., op. cit. Cit.*, p. 115 and next.
[111] *Ibid.*, pp. 115-124.
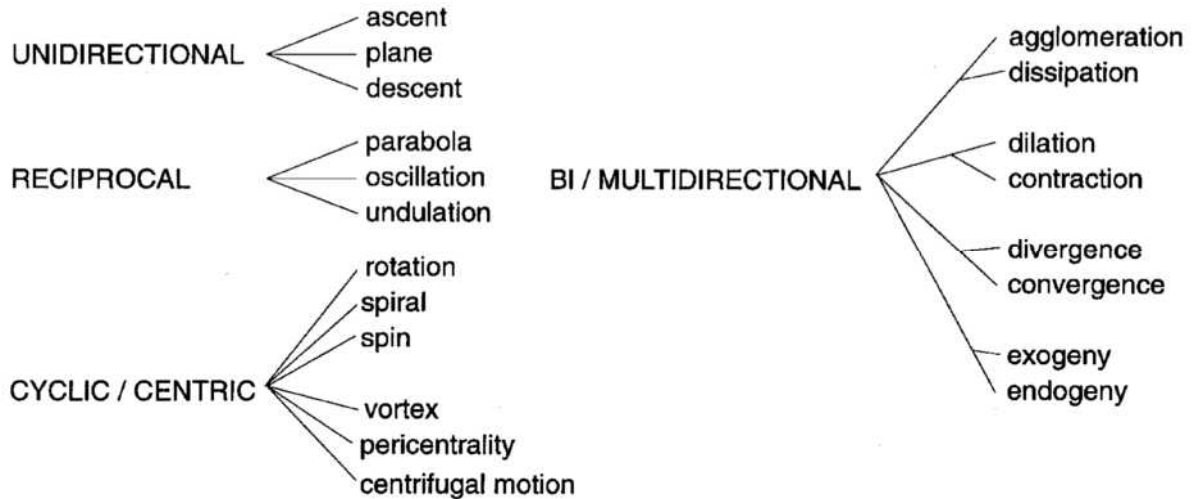
Graph 6. Typologization of motion and growth processes according to Smalley.[112]
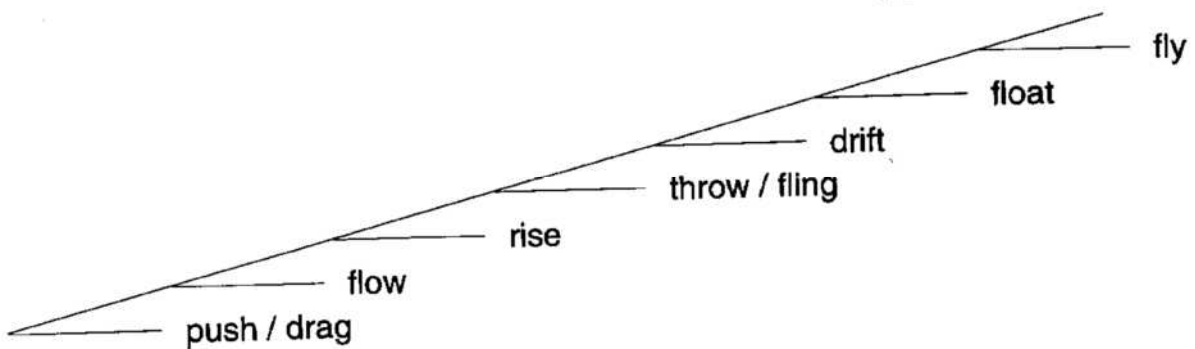
Graph 7. Seven characteristics of motion according to Smalley.[113]
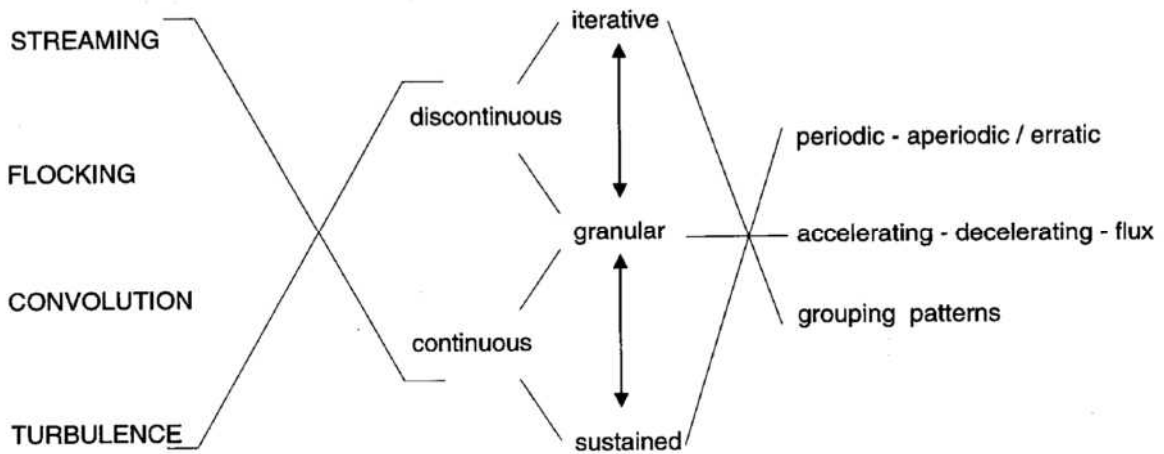
Graph 8. Typologization of textural motion according to Smalley.[114]

In this sense, both proposals can be read complementarily, with Roy's concept as an ideological direction, and Smalley's for the tedious and accurate identification of the basic proposals of "poetics" of a detailing nature. [115]

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[112] *Ibid.*, p. 116
[113] *Ibid.*, p. 117.
[114] *Ibid.*, p. 118.

I see as an important category in my own work what is central in generative theory – the distinction of stable and unstable elements, also in the form of achieving a synthetic third category, the impression of dynamistatics[116], through shaping the figure-background relationship in such a way that could be attributed to the impulse-reverb or object-shadow relationship. Dynamistatics, on the one hand, suspends the entire sound event beyond the broadly understood "gravitational" force, and on the other hand, it allows for a momentary, eventual return to this "gravity".

This is how the first part of visibilium *et invisibilium*[117] is shaped, in which, in order to maintain the essential legibility of gestures, I do not carry out traditionally understood motive or variational work (which opposes the cultural reflex, the need for processing),[118] while I multiply gestures in a slightly changed form (usually modifying one, sometimes two parameters),[119] which in itself causes the impression of steadiness (turning inwards of dramaturgy) dynamic action.

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[115] I consider this methodology to be quite respectable, but many more have been created (and are being created). Here I must especially mention (with sincere appreciation and admiration) the theory and methodology of unistic music expressed in Krzysztof Szwajgier's thought. Although the author himself uses the term gesture many times (e.g. "gesture of variety", p. 32), it also provides theoretical foundations for other, from my perspective, directly gestural, and the phenomenon inherent in Unism as a style and technique: the problem invoice form, line shaping (zone, projection, band), beam (disposition, pattern, set). Szwajgierian extremely intellectually accurate and fruitful description of the unist grammar will be helpful to apply appropriately (with the necessary adaptation, while maintaining its essence) also to the description of other types of movement in stylistically and technically different works. *Cf.* K. K. Szwajgier, *Obrazy dźwiękowe muzyki unistycznej. Inspiracja malarska w twórczości Zygmunta Krauzego*, Kraków 2008. Publication of Tarasti is also important to me. E. Tarastiego, *Semiotics of Classical Music. How Mozart, Brahms and Wagner Talk to Us*, Berlin, 2012, which in a very interesting way derives from philosophy *soi-moi* and analysis Schenker's shapes models *Will*, *Can*, *Know* and *must* in works, the latter of which focuses precisely on the problem of "grammar". One can mention also firmly less Comprehensive Proposals: *Cf.* A. Lewis, X. Pestova, *The Audibile and the Physical: a Gestural Typology for 'Mixed' Electronic Music*, [in:] *Meaning and Meaningfulness in Electroacoustic Music*, Stockholm, 2012.

[116] Szwajgier's Neologism, which is eagerly used by Wielecki. *Cf.* T. Wielecki, *Kompozycja dynamistatyczna* for chamber orchestra (2015), *Kompozycja dynamistatyczna II* for Chinese traditional instruments (2015). At the same time, it was a subtitle (guiding idea?) 58th International Festival of Contemporary Music Warsaw Autumn in 2015 (directed by Wielecki at the time).

[117] Intermedia sound spectacle for orchestra (sinfonietta type, with a single cast [listed instruments with variations, small instruments and objectophones]: flute, oboe, clarinet, Saxophone, bassoon, horn, trombone, percussion, piano, harp, accordion, string quintet), a group of amateurs, light, movement, audio and video playback.

[118] Although variation has always been important to me, now I'm looking for other levels of variation (metalevel, higher-order assemblies) – variation, variability semiosis musical gestures.

[119] Szwajgier called a similar understanding of working with gestures a "replication" procedure. *Cf.* K. Szwajgier, the text in the CD booklet *Muzyka Polska Dzisiaj – Portrety Współczesnych Kompozytorów Polskich – Lidia Zielińska*, polmic 090 / PRCD 1742, 2014. Due to the lack of explicit definition, I quote the entire context of the statement: "[...] Volatility and unpredictability dominate, not modernist (differentiating) however (as it was in post-serial avant-garde), but postmodernistic (distinctive). We get diversity bricolage (accumulations) rather than collage (juxtapositions), so – although nothing is repeated – this differentiation is sometimes based on an obsession with repetition. Nothing wants to be "pretty" here, but the role of "objects" rejected-found» They perform both unconventional articulations and simple instrumental 5-finger-etudes. The musical narration does not lead, but only suggests: more and more connecting and disintegrating configurations of speaker sounds (concrete and electronic), percussion, melic. Typical for Zielińska, the replications will reveal their essence as a dangerous percussive memento only at the very end. The listener, deprived of simple narrative associations in this situation, gains in return something valuable: the freedom of his own integration of the musical meanings of the work. The matter of the seemingly chaotic work then reveals itself as a coherent figure, carrying in terms of communication. Complexity turns out to be style. Music of *Nobody*, although composed with the intention of obtaining an "instant" result (the possibility of quick preparation by a youth orchestra), can turn out to be not only sonically compelling, but also unexpectedly profound. No one is perfect, nothing is perfect. Only the recipient (perfect?) can make them so." [translation after Szwajgier done by myself].

Graph 9. Multiplication of gestures. *visibilium et invisibilium*, mm. 59-64 (reduction).

At the same time, the gesture as a figure is contrasted with a background – often *sui generis* heterogeneous, vibrating, colourful – and thus giving the impression of dynamised statics.

Graph 10. Example of dynamistic layers. *visibilium et invisibilium*, mm. 20-22.[120]

The intention is therefore not to "reach the state", but to "achieve" it continuously. It consists of three phases: momentary intensification, preparation (stabilization) and "point" launching of the process (stabiklity) and its static reverberating (dispersion). The categories of stability and instability are treated here in their "gray" zones.

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[120] Gesture (figure, object) highlighted in yellow, various textural layers (background, shadow) marked in blue.

Graph 11. Stabilization, stability and dispersion processes. visibilium et invisibilium, mm. 19-21 (reduction).[121]

Such dynamistatics can be shaped at different levels of the work: not only the general understanding of texture, but the processes of the work as larger wholes (higher order), or specific unidirectional small processes of a lower order. These are my favorite *gestures of accelerando* and *ritardando*, breaking the uniformity of perceptual perception of time (on the one hand, the sense of stability, determined by the passage of subsequent *BPMs*, and on the other perceptually perceived impression of stratification, condensation, dilution of the temporal intensity of processes), which are at just such a lower level, an expression of dynamistatic thinking.

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[121] Stabilization process marked in blue, "launching the process" – green, resonance – orange.

Graph 12. Ritardando gesture. *visibilium et invisibilium*, mm. 59-63 (reduction).

The process of precomposition, in addition to collecting gestures, was therefore devoted to constructing a "model" of the proportions of stages in the work, on the one hand caring for the perception and building comfort of the recipient, and on the other hand ordering these processes according to a principle. The whole work is composed in temporal proportions approximated to the "shortening", descending Fibonacci sequence, where each of the parts performs its ideological, expressive and perceptual function:[122]

I: visualisation of the sound [introductory part, raising expectations];

II: materialization, gesturalization of the relation – sound and word [coupling part];

attaca;

III: visualization of meanings and dispersion of contexts [narrating part];

IV: observation of hidden acoustic forces in sound (acoustic beats) [resting part];

attaca;

V: channelling the expectation (reaching an acoustic climax and "exiting" it) [narrating part];

VI: dispersion of sound, word, meaning (culmination of meaning) [concluding part].

Graph 13. Schemata of the macroform ideas and functions. *visibilium et invisibilium*.

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[122] Here, for some simplification, without having to go into details, I use the description of the psychological functions of the form expressed by W. Lutosławski, founded on the basis of the concept of Witold Maliszewski analysing Beethoven's sonata form. *Cf.* W. Skowron (ed.), *Estetyka I styl twórczości Witolda Lutosławskiego*, Kraków, 2000.

I	II	III	IV	V	VI
13'49"	9'39"	6'41"	3'19"	2'24"	1'34"
~13	~8	~5	~3	~2	~1

Graph 14. Schemata of the macroform temporal structure. *visibilium et invisibilium*.

The whole piece is framed by ongoing ambient aimed at establishing a community and from the very beginning orienting the viewer to a multifaceted perception of the work, "immersing" it in the "space" of sound (both spectral – " rustling", pulsating drone; and physical – scattered sound "islands" among the audience). At the same time, it disturbs the legibility of the gestures of "opening" and "closing" the work: in a sense, perceptually, my work is never to begin and never end.

At the same time, a miniature "mock-up" of the whole is the I part, whose sections are also derived from the time approximations of the Fibonacci sequence (this time increasing) used as a tempo operation, achieving the impression of smooth and at the same time imperceptible acceleration.

In this sense, I try to achieve consistent construction of compositional grammar in relying on listening grammars, and at the same time introducing the coherence of the means and solutions used on many levels (e.g. the way of achieving and discharging the culmination as a composition of a higher order, similarized, for example, to unidirectional gestures-processes of lower order determining the phases of the first part (state crystallization and dispersion at the moment of crystallization). The idea of a split and prepared culmination – not only by the quality and intensity of the events preceding it, but also by the previously built "miniature" versions of the central culmination, implying its quality – has been one of my interests in recent times.

Duration	1'06"	1'11"	1'39"	31"	40"	57"	1'05"	26"	16"	12"	1'24"	12"	3'52"
Measures	1-3	4-19	20-48	49-58	59-73	74-92	93	94-102	103-108	109-125	126-135	136-141	142-
BPM	-	53	55	58	63	71	(71)	Rit.	84	105		139	120
Fibonacci sequence proportion	-	1	2	3	5	8	-	-	13	21		34	-
Tonal Center from *Credo III*	-	c	d	f	e	c	d(altered) =dis	c	(c)	(c)	(c)	(c/ci)	(cis)
Syllables from *Credo III*	-	vi-si-	bi-li-	Um	about-	about-	o-mni-	Um	Et...	-	-	-	-
Average dynamics	PPPP	Ppp	pp	p	Mp	Mf	f	f-p	f-pp	f-ppp	PPP->	FFF	
Sound quality (orchestra)	Drone	noise	Noise + granules	Noise + granules + ripple	Proper sound	Sound, noise, harmony	Culmination1	Striking harmony	Accounts.	Accounts.	Culmination2	Oscillation between spectra	tray
Sound quality (amateur group)	Drone (music box)	Accounts.	Drone (computing – cloud)	rustling	tray	tray	Rustling (processing – cloud)	Rustling (improvisation)	cd	CD/tray	Rustling (improvisation)	glockenspiel	tray
Sound quality (audioplayback)	Granulation	Accounts.	Accounts. breaths, voices	Accounts. Glitch voice, breaths	Glitch friction Glitch breaths.	Bach glitch.	Accounts.	Accounts.	Breaths	Accounts. Votes Bach	Accounts. Accounts. Accounts.	Culmination	Piano Glitch friction
Video (convolution point attack)		1:1	Slower	Slower	Slower	Slower		Slower	Slower			Very slowly, Visual disclosure of the sound wave	

Graph 15. Schemata of the I part form of *visibilium et invisibilium*.

1.4. Observations in the margins of considerations about the ways of reading sound movement

A physicist will define the **movement** only as the **displacement of an object in time within a specific frame of reference**. Applying this observation to the musical context, movement is also sound or music, with the proviso that it will be the movement of an acoustic wave, including all relations in which it may be involved or its characteristic behavior, both purely spatial, spectral and periodic. The second area of interest will be physical movement producing an acoustic wave. He will also look with interest at the consequences that the properties of this movement exert on the shape of completely different sign systems, e.g. the tonal system with its principles convergent (or, as some prefer, derived directly) with purely acoustic observations.

This understanding of movement is opposed by Hanslick's understanding which, using the power of metaphor (analogy), "virtualizes" certain aspects or effects of this movement into other, non-Euclidean spaces (e.g. contrapuntal motion, harmonic motion, topophonic motion, textural motion, etc.), although embedded in both objective and subjective perceptual perception. Carrying out further metaphors of movement causes the concept to "spill over" into other areas – cognitive, cultural, linguistic, semiotic phenomena, having their own "poetics" and ways of reasoning. Already at this point, the purely **working definition of a gesture as a meaningfull motion** causes a problem – since "virtual" movement is already giving meaning to the phenomena generated by physical movement – this metaphor as a sign receives another sign. This virtual movement has its own different traditions of reading: like Platonian, Aristotelian and so on.

In this way, from the very beginning, a picture of a complex weave is outlined – naturalizations of cultural already naturalized cultural categories, referring to various values, parameters, especially related to time, space and psychophysical or social phenomena. These, in turn, are also subject to the activities of creators within various mark systems. Then, a return to more physical approaches to movement (as in Denis Smalley's) produces a kind of "arc", a return to the starting point. The only light that illuminates this path seems to be the awareness of these discrepancies that exist *in principio*.

From the content quoted in this chapter, I accept what seems not to exacerbate this weave, but to explain it – awareness of the "translational", "semiose" nature of the approach to movement based on certain potential perceptual communities (which are an extremely

interesting perspective for further, in-depth research). At the same time, as the case of *GTTM* shows (where, I think, the value of "naturalness" was wrongly attributed to the tonal system of go), and as Herder has already predicted, **any attempt at a rigid systemic description of the rules for generating the quality of movement from a research perspective seems to be rapidly losing its value**. Therefore, it **seems necessary to build open (or autore-reproduction) descriptive systems, systems of building musical pieces, i.e. grammars based on psychophysical reflexes** (Herder's monadism, the perspective of form equated with Hanslick's auditory perspective) **and** cultural (naturalized cultural categories, semiotic theories) as equally strongly influencing. In this respect, Roy's step in adapting *GTTM* to much broader needs seems interesting.

The musical gesture as a higher unit of assemblage of a musical movement will, out of logical necessity, always appeal to the categories and problems that the latter introduces. Disorder in this respect will not result in an orderly study methodology of the first mentioned. At the same time, all of the perspectives described here briefly call for further, in-depth studies (both Herder's musical aesthetics, the role of naturalization of cultural categories and competence agreements in perceiving the same phenomena, detailing Roy's redefinition of generative grammar for the needs of music), which should be easier because these perspectives seem to be "timely" and highly intriguing, potentially gaining a wide range of researchers as Interested.

2. Musical gesture – basic paradigms of perception

2.1. The musical gesture as a reflection and synthesis of historical musical processes

Ordering the perception of creative processes taking place in the musical world and the accompanying hermeneutical or aesthetic processes from the perspective of Braudel's *longue dureé*[123] allows even in individual present events to "grasp" their much broader perspective, their participation in it, their attitude to the accomplished reality (history), and also, to a limited extent, to try to predict the role in future events and the direction they set, or which they imply. One of the philosophical theories, the theory of eternal return (palyngenesis[124]), proclaims a finite number of ideas that are constantly cloaked, with the development of knowledge and technology, in new hypostases, an endless spiral of reducible semioses of original ideas, between which new relations are created all the time.[125], [126]

Such a perspective requires the search for unifying points, revealing a different face of the meaning of incidental events, having an eventual character from the global perspective, and thus reminiscent of the Greek approach to *καιρός [kairós],* this very moment. However, they allow to capture the reflection of the gravity of larger processes, events of a cyclical, long-distance nature, counted in decades, so reminiscent of the Greek

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[123] Fernand Braudel established a long duration in the text that begins with the famous dramatic sentence about the crisis of the sciences "at the present time" (then, in 1958). A malicious one would draw a parallel with the state of today's aesthetics, music theory and musicology, which await a new theory of art comparable to that of Adorno. I don't even dream of laying out one. *Cf.* F. Braudel, *Histoire et sciences sociales, la longue durée*, [in:] *Annales E.S.C.*, X–XII, pp. 725–753. *NB* In defense of the crisis of aesthetic theory, it should be noted that cultural studies, linguistics, cognitivism and philosophy also share this state as the already mentioned situation of "convolution", requiring a transdisciplinary approach. Skórzyńska even points to a "map" of the currently basic new ontologies seeking to alleviate the crisis: (1) speculative realism (seeking at the junction of idealism, as non-realism in the mind-thing relationship): (a) radical correlationism, (b) non-philosophy, (c) object-oriented ontology (ooo); (2) new materialism (neomaterialism – searching in relations with matter and technological, ecological changes and the development of knowledge about organic beings): (a) materialist ontology based on the concept of ensemble and nonlinear history, (b) feminist new materialism; (3) actor-network theory (ANT); (4) theories of practice. The general direction of changes is indicated by Skórzyńska as "posthumanism". It is not difficult to see that many avant-garde attitudes of music creators are also based in the contexts of these ontologies or methodologies. *Cf.* A. Skórzyńska, *Op. Cit.*, p. 165 and next.
[124] The theory of eternal return was proclaimed by Heraclitus of Ephesus, Friedrich Nitsche and – As if it follows from the interpretation of the views quoted in this text on arts, including Music – through Jerome S. Bruner or Heinrich Schencker.
[125] After all, it is impossible to enter the same river twice, because the water has already passed! *Cf.* Heraklit z Efezu, *147 fragmentów*, trans. R. Zaborowski, E. Lif-Perkowska, Warszawa, 1996, pp. 34-35 [fragment 14 [A 45] = 22 B 91].
[126] Being convinced of Hume's explanation that humanity is always the same, juxtaposed with Herder's vision of the dependence of thought on language, I have no doubt that creative outputs from earlier times and contemporary creative outputs will always meet on the platform of ideas, even if expressed, clothed "in flesh" in extremely different ways, depending, however, on knowledge, cultural naturalization and enculturation, as well as the possibility of transmission and technology of expression of a given *Kairós*.

Χρονός [Krónos, Chrónos]. And this, in turn, gives way simply to pure duration, to long duration – *aἰών [aión]* – which is useful to describe the mode of being of eternal ideas, age itself, as a time interval so long that it is impossible for one man to perceive even with the prospect of an old life, and the very perspective of the staged nature of man's age.[127]

In this category, as a manifestation of *aión*, *longue dureé*, I see the eternal dispute about whether music has the power to refer to realities external to itself, such as whether it expresses, transmits, evokes emotions, if it expresses it in a way (iconic, metaphorical, sensual, and so on). Aristotle, Plato, Hanslick and Richard Wagner quoted in the text (*see* subsection 2.8) are exponents and even archetypes of this dispute, images of the positions of their *Kronos* in this, I think, Gordian knot, generating opposite, culturally naturalized attitudes of axioms – formalism (pragmatism, according to which music can only express states internal to itself) and idealism (music can express states external to itself alone). These two axioms are always clothed in their *Krónos* and *kairós* with new faces, replicated, but all the time essentially preserving their ideological DNA. Nevertheless, generations of creators and aestheticians have in common what Hanslick himself could not deny, namely the perception of music **as movement, as energy, as a trajectory, as a synthetic structure; and the embracing the overwhelming influence that music exerts on man through this movement**.

In my opinion, the idea of a musical gesture is a form of an Alexandrian sword capable of untying this Gordian knot. The elements common to all these dialectics are thus reflected in the main assumptions of musical gesture theory, although they may have different explanations for the central, agreed statement: gesture is movement and communication (meaning). Gestures **generate sounds** (both actually – the sound from the instrument, and abstractly – e.g. a fanciful, complex, synthetic sound structure), but gestures can also be **transfigurations** (transformations of energy into sound; sound structures into other sound structures; but also transformations of external into musical ideas – including representations, e.g. an iconic representation of some type of movement in sound, and equally metaphorical depiction of emotions; or the transformation of an acoustic signal received by the mind into a bodily response). [128] Gestures can be strictly musical, but they can also be performative-visual, accompanying the production of movement of sounds and responding to it. Gestures can be part of compositional grammar, grammar of performance, grammar of listening, but also of a technological system (e.g. *HCI* interface).

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[127] This perspective always evokes, as if full of hope *memento* the piece *Organ2/ASLSP (As Slow as Possible) by John Cage*, especially the performance of it in Halberstadt, Germany (still ongoing since 2001 and scheduled to be completed until 2640).
[128] J. S. Arias-Valero, E. Lluis-Puebla, *Op. Cit.*, p. 92.

In my understanding, derived from Chomsky, the process of generativity *in statu nascendi* presupposes forms of transformation in order to preserve its vitality, which is why any positions oscillating around the opposition of black and white will actually be varieties of gray – the most important concepts of the musical gesture presented, I think, reveal this with all its power. This corresponds perfectly with the common assumption in gestural theories about **crossing the Cartesian division into matter and mind**. The problem (also unresolved) is, however, the question about the ontic nature of action, namely whether man is able to create from nothing or only creatively transforms what surrounds him.

Therefore, the division of reflection on the conceptualization of the musical gesture runs along the relation to the question or categories such as synthesis, objective measurability, meaning, expression, content, intention, awareness of making a gesture, control elements within the gesture, automatic reflexivity of the gesture (cultural and neurocognitive), etc. are a necessary element and whether they provide sufficient definitional flexibility. Along this dividing line runs the formalism (pragmatism, structuralism) of some and the idealism of others. Hence the search for an answer as to whether the gesture necessarily refers to the various dimensions of the movements performed by the human being, or whether it can refer to other material and immaterial beings, real and virtual ones.

In this sense, the gesture, intuitively though variously understood, seems to me a good intersection of the eternal division of the axioms of internality and externality, as a reconciliation of both positions (although in varying degrees of proportion) and redirecting attention to the perception of other, more important categories, such as layered complexity, synthesis of gestures, their communicative value – serving to answer how they create relationships in the work and how and what sets of effects they achieve in Audience. At the same time, reflection on gestures seems quite natural, because there is a constant reference to its realization in sensory categories (movement, energy), accessible (in principle) to every human being due to the fact of birth, but it is also founded on the processes of cultural naturalization and enculturation, being accessible to a wide range of cultural participants.

Nevertheless, the common element of both positions is to take into account at any level that the **musical gesture is a movement (physical or virtual),** so the reflection should begin with a reflection on the gesture in general. It used to begin with Hugues de Saint-Victor's respectable and owning a true *gravitas* definition, which is why I start in the same way, although drawing a specific context.

2.2. Gesture in defining Hugues de Saint-Victor (Hugh of St. Victor)

It would seem that the Middle Ages – an epoch emblematically associated with a deep split with a hierarchical system of subordination and superiority between what is corporeal, sensual and what is spiritual, metaphysical – is not able to give a satisfactory answer to the issue of gesture, which is supposed to synthesize both these features. And yet, it is precisely this melting pot of views, social unrest, but also absolute cultural stability that has given space for this reflection. A reflection torn between the Augustinian-Platonic tradition: the theological and philosophical perception of body as a "cage of the soul", an animalistic element that leads to sin, which necessitates full discipline over gestures in order to avoid causing offense; and the Thomistic-Aristotelian tradition: the "abolition" of the sinfulness of the human body, due to the fact of the incarnation of the Savior into the human body (created in the image and likeness of God – personifying in the flesh a reduced image of the universe or the Church itself as the body of Christ, and the likeness to the action of the Son of God). The second tradition, however, does not completely ignore the defective nature of the body, for it allows an attitude of repentance and mercy and causes weakness towards other creatures, e.g. wild animals. Therefore, people acting under the power of evil are depicted with twisted members (also by laughter or dance, arousing a dubious connotation causing suspicion of [129]*Christianitas*), and holy figures in rigid attitudes characteristic of Romanesque and early Gothic contraposts. For the movement of the body expresses, according to the medievals, instability, temptations, debauchery, while stability, slowness, regularity call to mind the divine, eternal order of the universe.[130]

Jean-Claude Schmitt calls the Middle Ages simply "the civilization of gestures"[131] growing on the juxtaposition of speech and movement of the human body, visible containers for invisible content, being a sign and a guide, expressing spiritual experiences, emotions, personality, serving communication (performed to and for the sake of another person – thus being the principle of social ties and religious relationship with God), but also not devoid of the then ubiquitous hierarchy. The highest, prominent place was, of course, occupied by the theological gesture, which was intended to express theologically the sacrament understood

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[129] Although in the Church of the first centuries, the consequences of this affirmation were the subject of a lively debate, which culminated in the great iconoclasm.
[130] *Cf.* J. Le Goff, *Kultura średniowiecznej Europy*, transl. H. Szumańska-Grossowa, Warszawa 1994, pp. 351-354.
[131] J-C. Schmitt, *Gest w średniowiecznej Europie*, transl. H. Zaremska, Warszawa, 2008, p. 102.

in two ways by virtue of Augustine's venerable theology of the visible and invisible – (1) the sign by which God teaches[132], and (2) the visible sign of the invisible grace of God.[133]

All other gestures were supposed to reflect the hierarchical fabric of society, conventionally communicating outside and inside the community about the position of a given person. Interestingly, with the paradigm shift of the perception of human movement from Augustinian to Thomistic, changes also came in the perception of gesture: "positive" gestures began to be distinguished from the twelfth century, there were also "negative" *gesticulatio*, gestures considered exaggerated or sinful (such as laughter with exposed teeth).

With this paradigm shift arises a special hermeneutic field: gesture pedagogy, which contains instructions for novices to religious orders on how to live virtuous lives and thus achieve the eternal salvation of the soul through the discipline of dress, gestures, speech, and table. It is in this trend that the definition of Hugues de Saint-Victor arises, who, although directed above all to those who begin monastic life, makes a synthesis through which he addresses any member of the contemporary *world of Christianitas*, and even, with a skilful interpretation, a man completely contemporary to us, to any civilizational circle.

Hugues defines it as follows: "gesture **is the movement and configuration of the members of the body, adapted to every action and every posture (but also: having them in mind, according to measure and variations)".[134]** This definition is confusingly similar to the definition of discipline, i.e. control action in relation to a gesture.

Schmitt interprets the individual elements of this definition, starting with noticing that the gesture corresponds to the invisible movement of the soul and the visible movement of the body, and points out that the meaning of the gesture lies in the fact that it is perceived by another human being[135]. Hence the relationality of the gesture (only the gaze of the other person breathes "life" into the gesture) and the synthesis of the gesture (members and action are not separated from adaptation to it, nor action from posture, nor what is visual from invisible content, etc.). Schmitt concludes that the possibility of deciphering a gesture is culturally established by convention[136], which Guerino Mazzola criticizes by accusing too far-

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[132] *Cf.* Augustyn z Hippony, *O Trójcy Świętej*, transl. M. Stokowska, Kraków, 1996 [Book XI, issue 2, no. 3]; *Cf.* V. Giraud, *Signum et vestigium dans la pensée de saint Augustin*, [in:] *Revue des sciences philosophiques et théologiques*, vol. 2 (95), 2011.
[133] This definition of the sacrament, also traditionally attributed to Augustine of Hippo, preserves the current *Catechism of the Catholic Church*, Canon 1131.
[134] "Gestus est motus et figuratio membrorum corporis, ad omnem agenda et habendi modum". *Cf.* Hugues de Saint-Victor *De institutione novitorum* [translation from:] C-J. Schmitt *Op. Cit.*, p. 187. Emphasis added. Henceforth – any own underscores, if the author of the underline is not indicated.
[135] *Ibid.*, p. 188.
[136] *Ibid.*, p. 189.

reaching definition and assumption of meaning as an a priori element of the gesture, which would discriminate against the possibility of presemiotic[137], informational or cognitive interpretations. In my opinion, both attitudes are reconciled in such a way that the[138] **gesture always communicates information (a resource of data) that can be read using a variety of methodological resources (dictionaries).**

Schmitt identifies 4 areas of understanding gesture adaptation in Hugues' time and environment:[139]

(1) **the idea of appropriateness**: the relation of the adjustment of the gesture to what it means;

(2) **idea of purposefulness**: the gesture aims to cause a certain attitude or action;

(3) **the idea of measure**: limiting gesture is tantamount to morality;

(4) **The idea of morality**: it is the gesture itself that changes and determines the movement of man.

Adaptation, I think, in Hugues's sense – and from the point of view of modern man who nevertheless wants to apply this definition – is untenable in the wording of *expresis verbis*, although it must be acknowledged that the flexible way of defining Hugues stands the test of time, allowing for functional, expanding interpretation. The dictionary understanding of adaptation as "making it appropriate to specific needs" has changed over the centuries, it is no longer fortified by the morality of the Christian era. Therefore, the adaptation of the gesture does not have to entail the need to meet a number of conditions (including limiting), the non-respect of which is based on strict discipline in order to avoid the depravity of the soul with the desires of the body and to achieve eternal life, but it may mean the fulfillment of a number of conditions, including limitations, in order to make sure that the gesture will be sufficiently (1) clear (appropriateness), (2) understandable (purposefulness), (3) limited, or emphasized, in order to modulate the force of its influence (measure), (4) exerting an effect on another person (morality). In a word: shaped communicatively.

The definition of a gesture takes into account two components: the movement of the **human** body and the communicative value, i.e. the form, configuration (*figuratio*) of the members of the body revealing **the purpose, intention**. As Schmitt mentioned form, configuration due to its visual (figurative) iconicity and movement (but also betrayed in

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[137] I use parallels here, calques from English: *presemiotism* (can also be translated as pre-semiotics), in the context of the description of the attitude towards meaning within the existential semiotics of Maurice Merleu-Ponty and the tradition of reflection created around him and continued, I have not noted in Polish-language publications the use of this or similar formulations to describe the sense-creating role of the body in the experience and perception of art, in which *Le Corps Vécu, animé* is empowered. Guerino Mazzola uses this concept intensively as a key in his own attitude, which certainly has an impact on popularization.
[138] G. Mazzola (ed.), *The Topos of Music III: Gestures: Musical Multiverse Ontologies*, Cham, 2017, p. 849.
[139] C-J. Schmitt *Op. Cit.*, p. 189 and d.

purpose) **expressiveness (expression of experiences and will)** implies conventional meanings. Mazzola, on the other hand, proposes to interprete *figuratio* formalistically as an articulation of the whole, as a complex, choreographic anatomical system, perceived as the starting data, output. Finally, the gesture also has an attitude to **achieve posture** (*modum*) subject to modality (shaping movement through action and attitude). This *modulatio*[140] of this movement can occur through discipline (self-control or control from outside). So it is an emphasis on technical value, gestures are achieved by human behavior. [141]

Hugues's definition can therefore be summarized, I think, in the division of its elements into **external and internal**, and the movement and **expression** on the principle of antitheses – *motus* as an external (objective) movement, opposed to an *agenda* as an internal movement (intention, animus, movement as part of a larger process, also effects); *figuratio* as an external expression (arrangement, shape, form of expression, convention) opposed to *habendi modum* as an internal expression (modal shaping, by will, emotion and attitude).

Juan Sebastián Arias-Valero and Emilio Lluis-Puebla note that in a sense Hugues' definition is pragmatic in Peirce's sense and can therefore be interpreted as Peircean tertiary (continuity mediated between two states: source and effect) according to the concept of the three phenomenological categories of being (and their semioses):

(1) "Firstness: **immediacy**, first impression, freshness, sensation, **unary predicate, monad**, chance, possibility;

(2) Secondness: **action-reaction, effect**, resistance, otherness, binary relation, dyad, fact, actuality;

(3) Thirdness: **mediation**, order, law, **continuity**, knowledge, ternary relation, triad, generality, necessity."[142]

The beginning of the gesture, then, is the first, then the third, and, as the goal, the second. "The thread of life is a third; The fate that snips it, its second." The transformation and modification of thirdness (mediation) leads to semiotics, so Hugues' definition can be read semiotically and subject to Peircean semiosis processes.[143]

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[140] Not to recall here the musical concept of music as *ars bene modulandi*.
[141] G. Mazzola (ed.), *Op. Cit.*, p. 847.
[142] J. S. Arias-Valero, E. Lluis-Puebla, *Op. Cit.*, pp. 90-91; *Cf.* M. Kilanowski, *O teorii kategorii C. S. Peirce'a i o przezwyciężaniu trudności klasycznej filozofii – na podstawie współczesnych odczytań*, [in:] T. Komendziński (ed.), *O myśleniu procesualnym: Charles Hartshorne i Charles Sanders Peirce*, Toruń, 2003, p. 74 and next.
[143] J. Buchler (ed.), *Philosophical Writings of Peirce*, Dover, New York, 1940 p. 76 [after:] J. S. Arias-Valero, E. Lluis-Puebla, *Op. Cit.*, p. 91.

Thinking on the one hand in the categories of gesture semiosis and, on the other, in the categories of utterance, expression, "emotions" contained in gestures as expressive shapes (Robert S. Hatten will write "significant energetic shaping through time") at the same time preserving the original context ("gravitation towards ...", intention, purposefulness) and allowing to cut oneself off from the original (by taking it out of context) shapes the possibility of a flexible approach to form in relation to the composition's needs.

In my general observation, two dominant types of building contemporary gesture-oriented forms emerge (in composers who could be described as "gestural"): (1) the "sampler" effect – building sequences of gestures on kaleidoscopic principles (repeating and juxtaposing gestures as closed, unprocessed units in new assemblies, contextual weaves, as a kind of "serialization")[144] – but also (2) sequences of "resulting" – building contextual and logical "sequences" (the result of one gesture from another, building a cause-and-effect relationship between them)[145] – as specific opposing orders.[146]

This is the *mode of* thinking on the basis of which I build the dramaturgy of Part III, and Part II: numerous repetitions of a series of gestures are broken by drawing causal consequences, sequel. The sensuality of the gesture (external motus, process morphologies, demarcation of episodic momentum) is equally important to me, as is the context in which it can be placed as a sign (inner *motus*, poetics, rhetoric).

Thanks to this, I can shape specific "catalogs" of semioses of gestures, which I use according to my associations, feelings. After all, these are not permanent, fixed "catalogues", but most often built in the context of the conceptualization needs of the work (hence, in principle, a prerequisite is to conduct *research* and compare one's own structures created in the imagination with found gestures-references). The best confirmation of this fact is the phenomenon I have noticed, that certain ideas of gesture permutations are created already at the moment of composing a work, i.e. after the "closure" of the catalog.

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[144] To put it very personally, for me such a value has the works of Andrzej Kwieciński, Simon Steen-Andersen or Marta Śniady. Characteristic in their compositional technique is to regulate the dynamics of the process, tension and relaxation, expression by intensifying and thinning repetitions in time, or expanding and narrowing the "ambitus" (the amount) of "gestures-samples" used. This does not mean that these repetitions are not a form of shaping meaning. However, they gravitate more towards replicative weaves (temporary, which does not mean unplanned; "looking" for the moment of synchronization of contexts) rather than the form of "logical" consequence *expresis verbis*. I can't fail to mention the conceptual piece *Alphabetised Winterreise* by Erik Carlsson (realised by Arno Lücker). The grammar of this piece is based on the sampling of words from *Winterreise* Franz Schubert (performed by Ian Bostridge and Leif Ove Andsnes) and the arrangement of these samples in alphabetical order (as an auxiliary rule in the case of repetition of words: the order is determined by the order in which they appear in the original piece). It is basically a variation of the assembly form (mounting form).

[145] For me, this is the value of the works of Salvatore Sciarrino, Pierluigi Billione, Lang (radical representations), as well as Bedrossian or Johannes Kreidler. Despite the impression of assembly form (mounting form), however, it is a variation of the processual form.

[146] This bipartite is overcome by the proposals of form, e.g. in Beat Furrer, in whom the "sampler", "kaleidoscope" forms very slowly, constantly begins to emerge a cause-and-effect order. Often it is a composite that resembles a consequence of the Smalleyian type of a gestural assembly and a smooth transition to the textural assembly type. *Vide:* B. Furrer, *Nero su nero* from the opera *Violleter Schnee*.

## 2.3. Musical gesture – perspective of Guerino Mazzoli (*et al.*)[147]

Mazzola, as a free jazz pianist and mathematician at the same time, constructed a rather rigorous framework for the musicological description of gestures on the basis of topos theory (in a logical sense, as an aspect belonging to category theory, being a generalization of the combinatorial set theory), including the theory of performance and the description of motion, as mathematical formulas, made possible by the same basis of both musical and mathematical operations, i.e. structure. At the same time, he himself abandoned the established algebraic methodology in favor of a topological one, having come to the conclusion that the formalistic structures and procedures he describes algebraically do not fully coincide with his musical intentions – freedom and temporality – although he also finds temporary applications for them (e.g. to describe the conductor's gesture).

Mazzola defines a gesture by reinterpreting Hugues de Saint-Victor's definition logically as a topological gesture – **a diagram of curves in topological space X (formalized by space-time).**[148] The shape of the gesture is determined by the directional dial Γ, which consists of arrows and points connected to each other. The diagram shows arrows as continuous paths in X and points as points in topological space, preserving the configuration of Γ. On its basis, it is possible to obtain mathematical formulas.[149]

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[147] In this section, I refer to the mathematically formulated theory of gestures, but I do not intend to create the impression that for me the mathematical formulas quoted by Mazzola are fully understandable, especially in the absence of knowledge of the basics of advanced mathematics, such as category theory, without which it is impossible to draw the right conclusions and realize their consequences. Nevertheless, many conceptual or dogmatic categories are understandable enough to allow us to trace their provenance and place them in the broader context of theoretical and philosophical concepts, even if a number of issues remain elusive to me. I also refer to hermeneutical works with respect to the theory of Mazzola, which bring the mind unfamiliar with advanced mathematics at least part of the meaning of the established mathematical theory of music. To ignore Mazzola's reasoning would lead to the omission of the mathematical justification (even if as hypotheses) of a number of gestural issues: generative, transformative, infinite semiosis approach, hierarchy of structure, abstraction of the absolute bond of gesture to space and the need to perceive gesture as a movement of the body [or its hypostasis], which is critical especially in the context of, for example, sonification *HCI*.

[148] J. Arias-Valero, *Gesture Theory: Topos-Theoretic Perspectives and Philosophical Framework*, Colombia 2018, pp. X-XI.

[149] G. Mazzola, M. Andreatta, *Diagrams, Gestures and Formulae in Music, [in:] Journal of Mathematics and Music*, 2007, 1 (1), p. 30; G. Mazzola (ed.), *Op. Cit.*, p. 914.
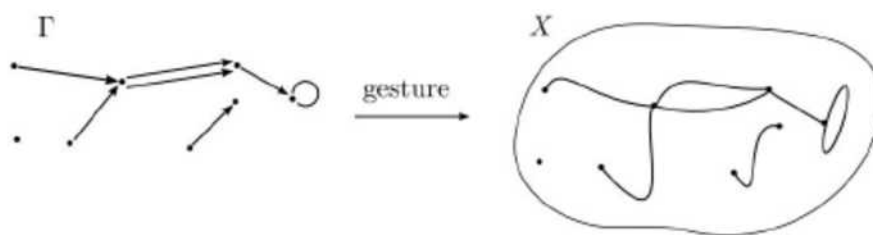
Graph 16. A topological representation of Mazzola's gesture concept.[150]

The definition corresponds to Mazzola's presemiotic approach – it does not take into account meaning as an element not belonging to logic (informal), but only defines the parameters and configuration of the figuration of sound (limbs of the body) in the context of the topological space-time (in the Euclidean sense) of the movement of the figuration of sounds (body). However, he notes that promediation in execution sooner or later leads to semiotics. Mazzola points out here the regularity according to which mathematical "formulae are commutativity relations between gestural paths. Conversely, musical activity 'unfreezes' formulae into gestures that can be described as the unfolding of formulae in space-time".[151]

The main problem with this definition, as Arias-Valero and Lluis-Puebla point out, is the question of **(topological)** space, namely whether in Euclidean space the objects embedded in it are possible to decompose pointwise. Mazzola, noticing the problem in explaining on the basis of this definition how the human body is modeled in a non-two-dimensional way, had to propose the construction of hypergestures – gestures of gestures[152] – or locations – generalized topological spaces – and the use of Grothendieck's topos (sheaf category) or topological categories[153]. Thanks to this, Mazzola's ideal of recovering gestures (substantial motion) from morphisms (especially functions) is realized, and not only taking into account their beginning and end[154]. Therefore, in the understanding of Mazzola, the **essence of the gesture is the shift, the continuity of movement between the mentioned beginning and end**[155].

Nevertheless, Arias-Valero and Lluis-Puebla emphasize that the concept of gestures **is not spatial in itself**, although it can be applied in these categories, justifying it with the possibility of presenting them in two-dimensional diagrams, which are the most important nonspatial equivalent of bodily gestures[156]. The introduction of **the concept of abstract**

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[150] J. Arias, *Op. Cit.*, p. 2.
[151] G. Mazzola, M. Andreatta, *Diagrams...*, *Op. Cit.*, p. 25.
[152] G. Mazzola (ed.), *Op. Cit.*, p. 915.
[153] *Ibid.*, pp. 907-908.
[154] J. S. Arias-Valero, E. Lluis-Puebla, *Op. Cit.*, pp. 107.
[155] *Ibid.*, p. 108.
[156] The form of such a diagram can therefore be a score, understood as a graph of the function x from y, between the pitch "height" and time dimensions.

gestures establishes a dialogue between body gestures and diagrams in a natural way. In this sense, all musical transformations are abstract, their essence is not space, but metaphorically understood sound "spatial" shapes. [157]

An abstract gesture, according to Arias-Valero and Lluis-Puebla, resembles a skeleton or shape, representing an abstract configuration embodied in a concrete context. Therefore, its topological interpretation comes true as trajectories and points in space; Or, in a schematic interpretation, skeleton is embodied as a morphism and an object assigned to a category[158]. Hence, it is inferred that the category of gestures must not only be supplemented by hypergestures, but also **"lower degree" gestures** (simplified sets, sheaf theory enabling the transition from the local to the global) that make up gestures. In this sense, the potentially infinite folding of lower-order skeletons into higher-order skeletons closely resembles Peirce's infinite semiosis. Similar processes are described in the context of the homology of topological space (as a measure of how far space is from an object), for which the substitution of triangulation of Euclidean space (mapping it with triangles) for squares or cubes (which consist of triangles) or counterpoint theory, in which, according to Mazzola, a single interval can function as a gesture due to the adoption of infinity theory – is a continuous reference to the infinite process of pointing Higher and lower order gestures.[159]

This reveals the fact that even at the mathematical level the gesture is too complex a unit for a uniform description, and it is **necessary to search for its simplified or complex subtypes** of which or in which it is composed, thanks to which it is possible to capture more spatial relations, especially the location of gestures (homotopy). Some abstract gestures represent the infinity feature of their generation (in the context of transformation theory) and are also included in this category, which solves Mazzola's problem of transforming algebraic calculations based on concrete gestures. [160][161]

Mazzola's theory dispels many problems, but also generates new ones, indicating the need to review the concept of its formula: if only because of the need to find a possibly existing object uniting the categories of transformation diagrams and spatial gestures, better explaining this complex relationship than the concept of abstract gestures. [162]

Arias-Valero and Lluis-Puebla note that gesture theory, despite its inventiveness and integrity, is usually misunderstood by mathematicians (who consider it frivolous) and musicians (for whom it is too formal, *ergo* useless). In my opinion, the **mathematical proof**

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[157] *Ibid.*, p. 98.
[158] *Ibid.*, p. 98.
[159] *Ibid.*, pp. 98, 105.
[160] However, according to Mazzola, the gesture may have a non-spatial location.
[161] *Ibid.*, p. 93; G. Mazzola (ed.), *Op. Cit.*, p. 919.
[162] J. S. Arias-Valero, E. Lluis-Puebla, *Op. Cit.*, p. 108.

of many intuitions that appeared in the theoretic literature confirms, however, that mathematics and music can be mutually beneficial also in this field. The ultimate conclusions of Mazzola's dialectic strengthen the relationship between mathematics, music and human activity, as Arias-Valero and Lluis-Puebla point out: every human action is a gesture, the gesture of the performer becomes music, and the gesture of the mathematician analyzing music produces theorems[163] that in turn can serve to embody sound experiences through sonification within *HCI* interfaces[164], or the analysis of both the pieces[165] and performative performance gestures.[166]

> "Everyday technology is full of gestural devices. Consequently, gesture theory should be the easiest branch of mathematical music theory to share with the public."[167]

In this spirit and current, many concepts were created, remaining in closer or looser dependence with the concept of gesture topos, including the theory of harmonic morphism (Thomas Noll), transformation theory (David Lewin), a categorical approach to performance theory, which is the musical variety of string theory (already mentioned; Mazzola)[168]. In this context, it seems useful to define gesture in early Mazzola as a **series of postures that have a distinct meaning for the orientation and position of the object**[169]. It is a functional definition, focused on the problem of meaning in the structure of the gesture, including (as Mazzola) the case of a set of data that is significant for the recipient, using this data in a purposeful way. The purpose of using the acquired parameters is to directly or indirectly "control" (i.e. generate and modulate) sound using gestures (or more precisely, methods of reading the parameters of various types of gestures using motion controllers, e.g. game pads, phones, wristbands, etc.). This requires the creation of a gesture-enabled system model for Kinect use, and most often includes the following modules:[170]

(1) **phenomenological modeling**: analysis of gestures according to spatial, frequency, velocity criteria. The parameters are not given exactly, but in the form of a function of the properties of the system, described mathematically;

(2) **functional modelling**: analysis of gestures that can be performed in a given environment;

(3) **User-oriented modeling:** the research of the physical conditions of the body.

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[163] *Cf.* G. Mazzola (ed.), *Op. Cit.*, p. 1001 and d.
[164] *Cf. Ibid.*, pp. 1103-1160.
[165] *Cf. Ibid.*, pp. 1235-1262.
[166] *Cf. Ibid.*, pp. 1285-1312.
[167] J. S. Arias-Valero, E. Lluis-Puebla, *Op. Cit.*, p. 110. In this sense, I understand it as giving the above-mentioned psychophysical activities the rank of conventional activities, i.e. a description on the one hand as concrete *Prâxis*, as well as the ontological qualities inherent in this action.
[168] For more information: J. S. Arias-Valero, *Gesture...*, *Op. Cit.*; G. Mazzola, M. Andreatta, *Diagrams...*, *Op. Cit.*; G. Mazzola (ed.), *Op. Cit.*
[169] G. Mazzola, M. Andreatta, *Diagrams...*, *Op. Cit.*, p. 44; G. Mazzola (ed.), *Op. Cit.*, p. 900 and d.
[170] T. Lis, *Tworzenie muzyki przy pomocy gestów*, Wrocław, 2015, p. 6 [unpublished work, master's thesis].

Gestures performed and analyzed in this way create hierarchical structures, in particular they can be distinguished into gestures of a lower and higher degree (the latter consist of the former). Tomasz Lis also distinguishes several other types:[171]

Due to the way it was created:

(1) based on trajectory;
(2) based on force;
(3) based on formulas (periodic).

Due to the characteristics of their course:

(1) **effective**: achieving a certain effect;
(2) **accompanying**: accompanying effective gestures;
(3) **graphic**: perceptible, but not related to physical movement (posture).

In my opinion, the only platform that could combine my own approach with Mazzola's approach is to see it as a creative opportunity in the *art & science* trend, although I do not hide that, unlike the aforementioned author, I do not base my method on very accurate calculations (e.g. using a mathematical topos of a gesture). I must confess that it is conceptually alien to me. I shape the gestures I understand in accordance with the humanistic or even compositional methods available to me conceptually and perceptually.

Sometimes, however, I reach for simpler forms of calculations or mathematical inspirations (e.g. the already mentioned Fibonacci sequence as an inspiration of the form). In addition, using the *CAC* paradigm, in some cases I acquire spectral and pitch material (including harmonic processing) thanks to the popular *Spear* program and patches built in the *OpenMusic* environment. For the purpose of constructing harmony in a piece, for example, I use the form of a "calculator" (I call it an interval expander, consisting in linear expansion and narrowing of interval, scale, harmonic structures along the y axis, along with the possibility of building their inversion). Thanks to this type of treatment, in a smooth and imperceptible way for perception, it is possible to transform the original sound structure while maintaining its overall proportions. I use this expander to obtain sequences of some harmonic structures that perceptually retain the impression of similar to each other, or, better said, replicated from a common source (as interesting forms of "spectral" dominants, or distortions of harmonic series sometimes resembling a spectral reinterpretation of *modi* Messiaen). This is a concept that I am still developing and potentially leads to the formulation of more

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[171] *Ibid.*, pp. 11-12.

categorical conclusions, which in the future will be a systematized, comprehensive starting point for the height structure of my works.

An example of such of operation can be a spectral "progression" of violin *arpeggi*:

Graph 17. Extended D spectre (proportion: 2.43).

Graph 18. Extended D spectre (proportion: 2.3).

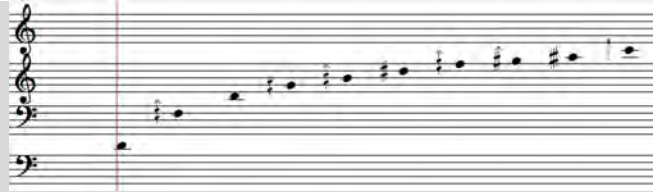**Graph 19.** Extended D spectre (proportion: 2.2).

Graph 20. Extended D spectre (proportion: 2.1).

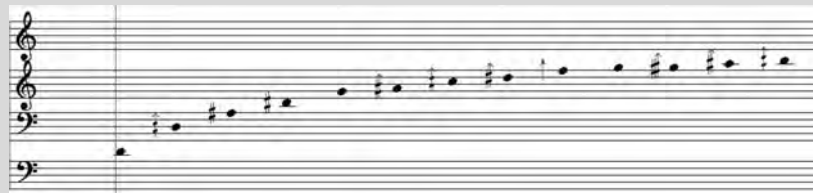**Graph 21.** Extended D spectre (proportion: 2.0).

Graph 22. Extended D spectre (proportion: 1.8).
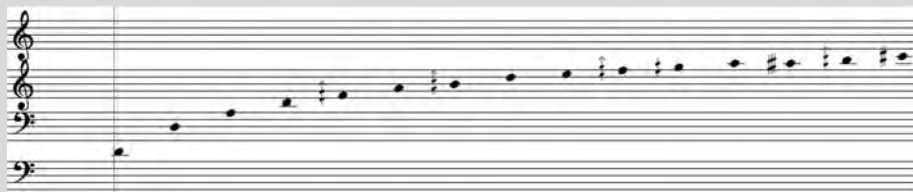
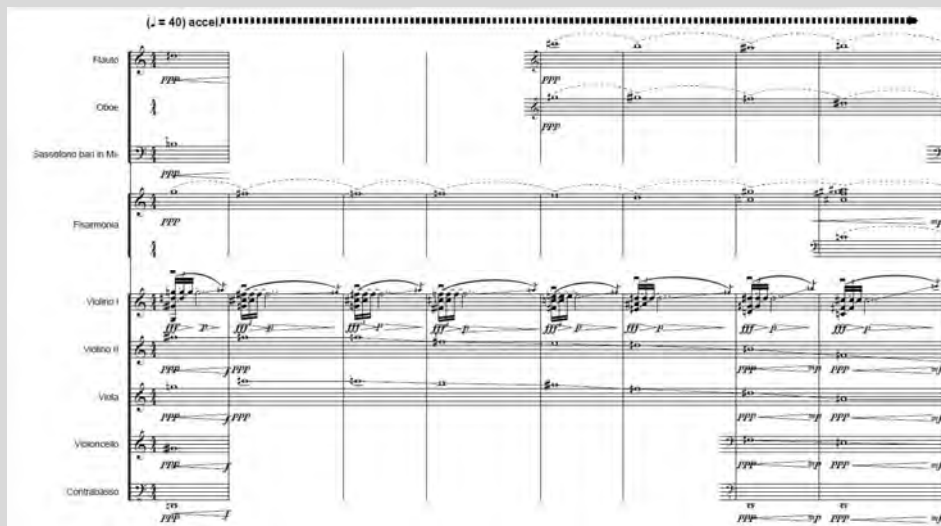**Graph 23.** Extended D spectre (proportion: 1.5).

Graph 24. Extended D spectre (proportion: 1.3).

Graph 25. Extended D spectre (proportion: ~1.08).

Graph 26. D spectre, 15 partials (proportion: 1).

Graph 27. Spectral progression, *visibilium et invisibilium*, mm. 279-286 (reduction).

In the case of *visibilium et invisibilium*, the pitch approach is in a sense symbolically oriented (e.g. framgent *visibilium omnium et invisibilium* from *Credo* III, or Bachs *Violin Sonata* no. 3 as *cantus firmus* and tonal centers at the same time) as well as computationally oriented (indicated above) and purely intuitively (e.g. the later mentioned "modulation" between movements III and IV, or harmonic deconstruction similar to the expander method

at the culmination of part V). Some previously prepared patterns of pitch material while working on the score I rejected, e.g. the exact transcription of the sound of friction of matches (as quite complicated, difficult to perceptually link) in favor of introducing this sound in *crudo in the* form of samples in the audio-playback (part I). Read with an accuracy of 1/16 of the tone, the obtained material has a scale, harmonic and rhythmic character, but to put it precisely, it is still a kind of "approximation", because the phonics of the gesture are primarily based on non-harmonic structures).

Graph 28. A transcription example of the match friction sound into melic structures (abandoned during the work under *visibilium et invisibilium*).

However, despite the fundamental conventionality of the operations (*nihil novi sub sole*) that I perform, *visibilium et invisibilium* is, according to my knowledge, a novelty for two reasons: (1) the *Schlieren Optics* apparatus has not yet been the object of interest of composers, much less used in such a way and on such a scale; (2) the group of amateurs included in the score as an important performance force is in essence a simplified form of **a laptop orchestra** (that's why I invited the Lambda Ensemble – Poznań Laptop Orchestra to cooperate). This is the first piece I know of for such ensembles (traditional orchestra-sinfonietta and laptop orchestra) and the other medias.

Mazzola's theory (coupled with the Godøyian approach) is also useful in *HCI* sonification, including the generation of sounds using motion controllers. However, noticing numerous possibilities (expressive, dramaturgical) that would be brought by the introduction of such elements (for Part II, for example: visual, motor control of the performer over the generated sound, feedback between movement and its parameters, as well as sound and, for example, its trajectories), I also notice many limitations (appropriate mapping, non-linearity of the course, the element of chance inherent in *performing live electronics*), which would make it a significant handicap in a work in which so many elements are under synchronous control, require a large number of rehearsals, etc. To fully present and use the potential (and not only as a gadget), this would require limiting the sound means only to... these controllers. So I decided that the resulting assumptions of the work (especially synchronicity) are not conducive to the use of motion controllers.

2.4. Musical gesture – perspective of Robert S. Hatten

Hatten's concept is one of the forms of embodying the assumptions of generativity (and thus primarily the construction of a theoretically useful concept as the foundation of an analytical and interpretative method[172]), and his definition of a musical gesture, although it is founded on the analysis of the works of "classics" – Wolfgang Amadè Mozart, Ludwig van Beethoven, Franz Schubert[173] – ideologically refers to the definition of Hugues de Saint-Victor. The author also notes that certain structures in the work are built synthetically (they transcend the separable treatment of the canonical elements of a musical work), hierarchically and multidimensionally (perceptible abstractly not only at the level of score, performance, but also in perceptual experience), due to which these structures can be attributed "directionality", and perhaps also meaning. Hatten defines these structures as *embodying sound*[174], and among them he distinguishes musical gestures[175], which he defines as **"any significant energetic shaping through time".**[176] Hatten's definition is very specific, constructed as an enumeration of "grammatical" rules for distinguishing gestures (justified due to the perception of gestures as signs) grouped in three categories concerning the knowledge of the gesture, its nature and meaning. In order to be able to talk about a gesture, it is necessary cumulative (joint) fulfillment of the following rules:

> **"Discovery of the gesture:**
>
> (1) Gestures are not the actions used to generate sound; rather, they are the meaningful shaping of sounds;[177]
>
> (2) Gestures communicate on a separate level of meaning from the notated score; their meaning cannot be found in the notation;
>
> (3) *ergo* – 'Gestures may be inferred from the musical notation...' By reading the notation sensitively we may infer which gesture was intended by a composer;
>
> (4) A listener can infer the intended gesture with access to only the sounds produced by a performer.
>
> (5) 'Gestures may be comprised of any of the elements of music, although they are not reducible to them...'. [178]

[172] R. S. Hatten, *Interpreting Musical Gestures, Topics, and Tropes. Mozart, Beethoven, Schubert*, Bloomington, 2004, p. 93.

[173] R. S. Hatten, *Musical Gesture, Lecture 1: Toward a Characterization of Gesture in Music: An Introduction to the Issues,* [source:] *projects.chass.utoronto.ca/semiotics/cyber/hat1.html* [Accessed: 31.01.2022].

[174] R. S. Hatten, *Musical Gesture, Lecture 3: Embodying Sound: The Role of Movement in Performance,* [source:] *http://projects.chass.utoronto.ca/semiotics/cyber/hat3.html* [Accessed: 31.01.2022].

[175] D. W. Scott, *Hattens Theory of Musical Gesture*, Pretoria, 2009, p. 19.

[176] R. S. Hatten, *Interpreting Musical Gestures...*, *Op. Cit.*, pp. 93 and 95.

[177] Hatten will add that it is founded in human affect and its communication – direct and complex. At the same time, Hatten discriminates against the rotation of machine gestures (an anthropocentric concept) as incompetent in reproducing subtle synchronizative and contextual differences.

Nature of the gesture:

(1) gestures are units of the 'perceptual present', which may be thought of as around two seconds [this rule is a contingent one, which may be related to the limits of short term memory; as such it should be regarded as an indication of the order of magnitude, rather than a stopwatch timing-ed, and are nodal ("nuclear") and gestures are built around 'nuclear points of emphasis';[179]

(2) Gestures provide continuity, even when there is none in the musical sound;[180]

(3) Gestures may be hierarchically organised, in that larger gestures can be comprised of smaller ones.

Meaning of the gesture:

(1) Gestures are motivic in nature and may serve thematic functions;[181]

(2) Gestures may encompass, and help express, rhetorical action... and so relate to extra-musical movement or even verbal dialogue, without being linguistic in themselves;

(3) Gestures may point to, or refer to other gestures in order to draw attention to a significant part of the music;[182]

(4) Gestures '...reveal the intentions and modalities of emotion and action...' ".[183],[184]

Hatten's understanding of gesture is also reminiscent of Ingarden's reflection on the work – musical gestures are an axiom, although revealed in various ways, often subjective ("perceptual now") at the level of musical notation, performance, reception and even analysis, and the composer, performer, listener and analyst basically become full-fledged interpreters. The aforementioned "perceptual now" also indicates that Hatten understands gestures as a form of prototype, lowest, concise and event-like organizational unit ("they last two seconds", so they could correspond to the motive, although they are a much broader phenomenon due to the functions they perform), which are grouped hierarchically as networks of relations with each other.[185]

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[178] Hatten adds that this is the reason for the synthetic nature of the gesture and its hierarchy – as a possibility of folding at a higher level.

[179] Thus, gestures have an eventual (not processual), perceptual-oriented character.

[180] Hatten will add that it is about continuity, embracing the different hierarchical levels of the gesture with one cognition – that is, perceptual perception as one value, not a long-lasting sound.

[181] Hatten adds that they are therefore subject to traditional compositional procedures – such as motivic variation, processing work, as well as more generally understood: development, changeability, constant evolution.

[182] Hatten adds that these are performative gestures, which are also subject to hierarchical groupings, in order to win the attention of the recipient.

[183] Hatten adds that for this reason they provide a certain level of "truth" in the work, as a reflection of Creators psyche (ψῡχή [psūchḗ]).

[184] D. Puk, *Gest muzyczny – wybrane problemy zagadnienia*, Poznań, 2020, p. 30 [unpublished work, master's thesis]; *Cf.* R. S. Hatten, *Interpreting Musical Gestures...*, *Op. Cit.*, pp. 93-95.

[185] Therefore, at each of these levels, the capture of gestures can be lost: by incorrect performance of the piece, by a record that is unclear to the performer, by auditory inattention, or by ignoring in the analysis.

Due to the adoption of a generative way of thinking, it can be said that gestures can be generated *ad infinitum*, modeled and shaded (transformed). For Hatten, gesture analysis is a search for functions in terms of their distinctions, in order to be able to systematize a limited number of types of gestures (reduction process), however, systematics, due to the position of perception as the main element of the method, is ad hoc and non-definitive[186]. Based on Hatten's generative approach, Douglas Walter Scott proposes his own 12 "algorithms" (grammatical rules) for performing gesture analysis. [187]

Gestures, as I pointed out in a previous work, for Hatten are "movement expressed in time interpreted as a sign in which information about the object performing the gesture on several levels (mental being) is encoded – about its consciousness (intentional or unintentional), about quality (posture, modality, emotional state), about the dynamism, directionality and purpose of this symbolic representation (including the convention under which it is read, In fact, its meaning "emerges")". [188]

Interpersonal motor communication, anchored in cultural and cognitive processes, is explicitly related to gesture. Therefore, gestures can be communicative units, meaningful, deduced (as an expressive vector) on the basis of the categories of continuity and quality[189] as a mental pattern of physical activity (iconicity)[190], and through this analogy can have an external meaning (metaphorical) [191]. Gestures in the mind are like emerging "figures" "transmitting" affect and emotions. Nevertheless, it seems that in Hatten's work gestures should first of all be used logically, especially due to the location of a wide range of subjects as interpreters of gestures, which may result in an adversarial relationship between their subjective reactions, views, beliefs, reflexes, habits in reception. Here, then, I think, lies the biggest drawback of Hatten's understanding, that is, the unification (and not reconciliation) of positions by ignoring some and distinguishing the other, leading to a hard dogmatic "objectification" of the distinction of gestures. The second weakness of Hatten's approach lies in the fact that by producing a methodology for the analysis of gestures, it was derived and conceived primarily for the music of a certain era. Despite the correctness of Hatten's claims and intuition, the tool produced is specialized, concrete, but not universalist. Analysis

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[186] R. S. Hatten, *Interpreting Musical Gestures...*, *Op. Cit.*, p. 124.
[187] D. W. Scott, *Op. Cit.*, pp. 34-35.
[188] D. Puk, *Op. Cit.*, pp. 31-32, based on: R. S. Hatten, *Musical Gesture, Lecture 2: Embodying Sound: The Role of Semiotics,* [source:] *http://projects.chass.utoronto.ca/semiotics/cyber/hat2.html* [Accessed: 31.01.2022].
[189] R. S. Hatten, *A Theory of Virtual Agency*, Bloomington, 2018, pp. 7 and d.
[190] The categorical nature of this statement can be softened by Ludwik Bielawski's concept of understanding the dimensions of movements and gestures.
[191] "Even the musical representation of natural objects (e.g., wind, or a storm) may be freighted with a human quality or amalgam of affective motivation (in cases where an agent identifies emotionally with the turbulence of a storm)," polish translation [in:] D. Puk, *Op. Cit.*, p. 32, based on: R. S. Hatten, *Musical Gesture, Lecture 8: Gesture and the Problem of Continuity*, [source:] *http://projects.chass.utoronto.ca/semiotics/cyber/hat8.html* [Accessed: 31.01.2022].

methodology of gestures derived from other epochs, provenances, trends, *etc.* it can be reconstructed and interpreted from Hatten's position, but it does not follow directly from it.

Hatten's definition of gesture as "significant energetic shaping through time" synthesized through the use of various biological, cognitive and cultural systems[192], leads to the conclusion that it does not necessarily refer to the movement of the body or actions generating movement (this exposes itself to criticism of Rolf Inge Godøy and Marc Leman) – Hatten writes directly that it is a presumed, virtual or realized movement; marked or significant[193]. The gesture in this approach refers to the experience "in" the music (and not "outside", such as the gesture of the performer, conductor) and can be performed unconsciously, but at the same time it can retain its validity due to the intention of the interpreter. A single gesture has the following value:[194]

(1) **qualitative**: in the sense of Peirce's primacy as concerning the attitude, modality or emotional state of the person making the performer;

(2) **dynamic/directional/teleological**: in the sense of Peircean secondness as revealing reactions, goals and orientations;

(3) **symbolic**: in the sense of Perice's thirdness as based on conventions or interpretations of "additional" meaning.

This distinction corresponds to the "three" layers of gesture distinguished later in this work: Godøy, Theodor Wiesengrund Adorno, Mieczysław Tomaszewski, Michael Chion, Pierre Schaeffer, *etc.*

Hatten's observation that (1) gestures refer not only to physical movement, but also to extra-musical movement (thought, rhetoric, verbal communication) and at the same time his (2) defining gesture as a significant energetic formation through time (in my understanding as a form of an ark, a vessel, enclosing in itself the original context, intentions, meaning) became the basis for capturing the gesture in my own understanding and expressing it in the work *visibilium et invisibilium*.

Such "arks", "illuminated islands" are gestures-references (so-called quotations), e.g. a sample of Olga Tokarczuk's voice pronouncing the word "I am", but also references to great works of the past (*Credo III*, Part III *of Bach's Violin Sonata no 3*, etc.). The spoken one word is a summary of the more extensive frame of the *Nobel Speech*, it also contains the self-expression of the Nobel Prize winner – it expresses a number of emotions and personal affects,

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[192] R. S. Hatten, *Op. Cit.*, p. 95.
[193] R. S. Hatten, *Op. Cit.*, p. 125.
[194] *Ibid.*

is a strong *statement* (almost a manifesto), is symbolic, expresses her intentions, purpose, betrays in the way of saying gestures, which in her speech she avoided and clearly controlled. All this is, I think, contained in one, abstracted as a sample gesture. The use of match friction samples is similar – without hearing the effect, one can "hear" the intention and direction of the movement, sensing as a promise what it is aiming at (a specific, qualitative effect), and what may or may not happen.

Thanks to Hatten's understanding, it is possible to use Mieke Bal's preposteric theory of creating relationships (commenting on each other) between artifacts of culture. That is why I understand quotations not as an expression of homage, or *per se* symbolic "gestures", but as a relationship, a new context, an interpretation of the works to which I refer. Both they themselves "speak" more about my work and, I hope, my work says something more about my understanding of them, putting it in a different light. That is why these quotations are subject to transformations, changes, transforigurations, assemblies at various levels, they are embedded in the dramaturgy, sometimes in the foreground, and sometimes they are pushed to the far plan – second, third. It is not only a question of quoting as a manifest act, but of the organic opening of "presented reality" in all its complexity. "Degenerating" in the first movement of *glitches* and "snaps" a temporary quote by Bach (experienced definitely not directly, but in the background perspective [chords in the orchestra] and the tertiary [processing in the audio-playback, multiple stretching in time]) announces, on the one hand, its foreground appearance in Part III, but also suggests my interpretation of it, a mental association, as a gesture derived (through semiosis) from the gesture of striking matches. This is not a verbatim, exact quotation. It is a form of reference, paraphrase, distortion, but with the preservation of idiomatics and the original "energy" that it stores.

At the same time, I try to avoid building specific "meaningful" interpretations (as a form of libretto), *statements*, or at least I do not think about it when constructing a work, but I try to predict the effects of the selected material and its compositions. The above-mentionedactivity, which I avoid, in my opinion is deeply contrary to the role of music as an ephemeral, idiosyncratic creation, spoken "indirectly". I prefer to think of myself as a coordinator of contextual convolutions, idiosyncratic experiences, rather than as myself establishing a unified interpretation. Respecting and appreciating the diverse background of the recipient, I try to encourage him to build his own interpretations and imaginations. So I try to accumulate, build in many ways, multi-layered in the hope that the recipient will want to observe them and synthesize them in themselves into some individual, own form of conclusion. I do not believe, as Szwajgier put it, in a "(perfect?)" listener (Some of the quotes I choose do not come from the universally available "canon", and so are potentially imperceptible even by specialists), but I believe in the perfect, transforming power of

individual experience, which is not unilaterally suggested, but encouraged to discover or intuit on oneself.

2.5. Musical gesture – perspective of Rolf Inge Godøy (*et al.*)

One of the goals set by Godøy and Leman was to build a coherent theoretical and methodological framework for studying the similarity of sound and movement in musical experiences, and the movement of the body itself in musical contexts[195]. Their theory, despite a clear conceptual direction towards performativity[196], is very broad, which allows flexible use at various levels of "embodied cognition" of sound: starting from abstract structural gestures, through purely executive ones – done by musicians, conductors, or those ones created as a result of the use of motion sensors, dance ones to automated body reflexes. Exceptionally, therefore, I leave the definition of gesture to the very end of the subchapter, having previously presented and organized the sources that shaped Godøy and Leman's conviction.

As in other cases, this approach synthesizes many methodologically different concepts from different fields – cognitive science, language, etc. – although the direction of this synthesis is clearly perceptible: the performative approach. Godøy and Leman see the metaphor of the description of sound phenomena with the "labels" of spatial-sensory[197] categories, appreciating practical utility, criticizing the low conceptual codification (lack of precision). Therefore, they wonder whether gestures are rightly considered natural and how the modality between the sound system and the movement system is broken, and whether the similarity[198] requires complete iconicity or whether analogy processes (e.g. in the form of Schaeffer's morphodynamics) are sufficient.

Here emerges the first basis of Godøy's theory: **Pierre Schaefer's typology of sound objects**, expressed in *Traité des Objets Musicaux* (1966)[199], in which the founder of the concrete music trend proposes, as Schreiber notes, a synthetic metaphor of perceptual

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[195] R. I Godøy, M. Song, K. Nymoen, M. R. Haugen, A. R. Jensenius, *Exploring Sound-Motion Similarity in Musical Experience*, [in:] *Journal of New Music Research*, 2016.

[196] The concepts of Rolf Inge Godøy and Marc Leman have evolved smoothly in the last twenty years, which can be seen when reading their texts in the context of their canonical achievement, i.e. a monograph from 2010, focused on a decidedly performative basis. In this text I devote more attention to their smaller, dispersed texts, and to the main, definitional chapter of the monograph (the remaining chapters are focused rather on specific performative problems and *HCI*, solved practically).

[197] R. I. Godøy (*et al.*), *Exploring...*, *Op. Cit.*, p. 2.

[198] A state of elasticity, approximation, while not being identical. *Cf. Ibid.*

[199] The binding Polish nomenclature was established by Włodzimierz Kotoński. *Cf.* . Kotoński, *Muzyka elektroniczna*, Kraków, 2002, p. 44.

and morphological categories[200]. This concept came from a critical approach to the Western musical system, which it enculturated to the separate treatment of elements of the work[201]. Hence, Schaeffer's theory is based on universal, intercultural principles of human perception – firstly, the separation of sound from associations, thanks to which the process of reduced listening[202] takes place as the first of the correlates, and secondly, typologization of the description of the characteristics of the sound structure as an intentional, holistic phenomenon, through perceptible morphodynamic properties (mass, dynamics, movement, harmonic aspects, melodic profile, mass profile and granularity). Focusing on the shape allows to assess the similarities of movement and trajectory.[203]

A sound object is hierarchical by definition – an object that is a component of a higher-order structure, due to the formation of abstract relations between it and its structure, establishes a **musical** object (Godøy speaks of a composed sound object). Skepticism, or even criticism of the literal treatment of the "object", sound compared to topological categories, did not invalidate the need to maintain, according to Chion, the "sound myth": the process of reification and visualization of sound phenomena, leading to perceptual perception as a multidimensional, homogeneous phenomenon.[204][205]

Godøy interprets a sound object as a holistic intentional unit formed in consciousness by one's own mental activity (imaging), and as potentially correlated with the image of some action. On this basis, he forms the hypothesis **of a continuous process of mental sound tracking**. Listening and tracking enable mental imagery within all domains (perception, thinking, abstract thinking). Schaeffer's idea, close to phenomenological thinking, is described as follows:

(1) "the sound object is not the sound body;

(2) the sound object is not the physical signal;

(3) the sound object is not a recorded fragment;

(4) the sound object is not a notated symbol in the score;

(5) The sound object is not a state of mind."[206], [207]

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[200] M. Schreiber, *Muzyka i metafora. Koncepcje kompozytorskie Pierre'a Scheffera, Raymonda Murraya Schafera i Gérarda Griseya,* Warszawa, 2012, p. 188 and d.

[201] Anyway, it should be noted that the described state is still ongoing.

[202] Reduced listening can be defined as listening to the internal richness of the features of a sound object, without external references, focusing on typological and morphological features. M. Chion, *Audio-wizja. Dźwięk w obrazie*, transl. K. Szydłowski, Warszawa, Kraków 2012, p. 28 and next.

[203] M. Lech, *Pierre'a Schaeffera próba stworzenia metody analizy muzyki elektroakustycznej*, [w:] *Kwartalnik Młodych Muzykologów UJ*, nr 33 (2/2017), p. 102 and d.

[204] R. I. Godøy, *Images of Sonic Objects*, [in:] *Organised Sound*, 15 (1), Cambridge, 2010, p. 60.

[205] M. Schreiber, *Muzyka i metafora…*, *op. cit.*, p. 189.

[206] M. Chion, *Guide des objets sonores*, Paris, 1983, p. 34; *Cf.* E. Schreiber, *Opis przedmiotów dźwiękowych Pierre'a Schaefera. Od metafory do kompozycji*, [w:] *Kultura współczesna*, 1 (72), Warszawa, 2012, p. 32.

It also distinguishes 3 elements of a sound object:

(1) **stimulating and modulating sound**: transfer of energy from the performer to the instrument; envelopes, dramaturgy enclosed in one sound (gesture); continuum between sustained, iterative, impulsive and other sounds;

(2) **sound tracking**: not related to production, but closely related to the sound functions of tracking the resonant envelope (contour, melody, rhythm), spectral shape (timbre, dynamics), etc.;

(3) **accompanying actions**: synchronized with certain features of music; amodal, affective or emotive gestures related to the experience of sensation in the musician (effort, speed, impatience, anxiety, calmness, balance, elation, anger). [208]

Sound objects clearly have gestural components (homogeneity, hierarchy, production of mental image, etc.), while methods of studying the texture and timbre of music introduce gestural categories. In this sense, it is the methodological basis for Godøy.

On the occasion of recalling the father of concrete music, it is impossible not to mention the assumptions of both *the audio playback* part in *visibiium et invisibilium* and electronics realized by a group of amateurs. Electronics is maintained in the French type, that is, embedded in thinking on the search for a common ground between instruments and electroacoustic sounds, between which a relationship of complementarity and homeostasis is created, like two threads co-creating a homogeneous (potentially) fabric.

Very often in the electronic part I use the compatibility of the process (parts I, IV, V – especially the unification of the gesture at synchronous points and support in the moments of "leading", and after reaching – polygenization, dispersion), although maintaining the distinctiveness of the material "poetics" of the layers (the audio-playback is based on sampling, the part of the amateur group – playing on objectophones and small instruments, *live processing,* generation of sine waves). Sometimes the relation is shaped as a homogenizing counterpoint (i.e. a counterpoint of different vectors, connecting into a common gesture at the synchronization point) – the tape initiates processes as a figure, the orchestra is the background, and sometimes vice versa (especially visible in parts II and III).

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[207] These observations meet very closely with Ingarden's observations about the nature of the musical piece and musical experience.
[208] R. I. Godøy, *Gestural Sonorous Objects*, [in:] *Organised Sound*, 11(2), Cambridge, 2006, p. 158.
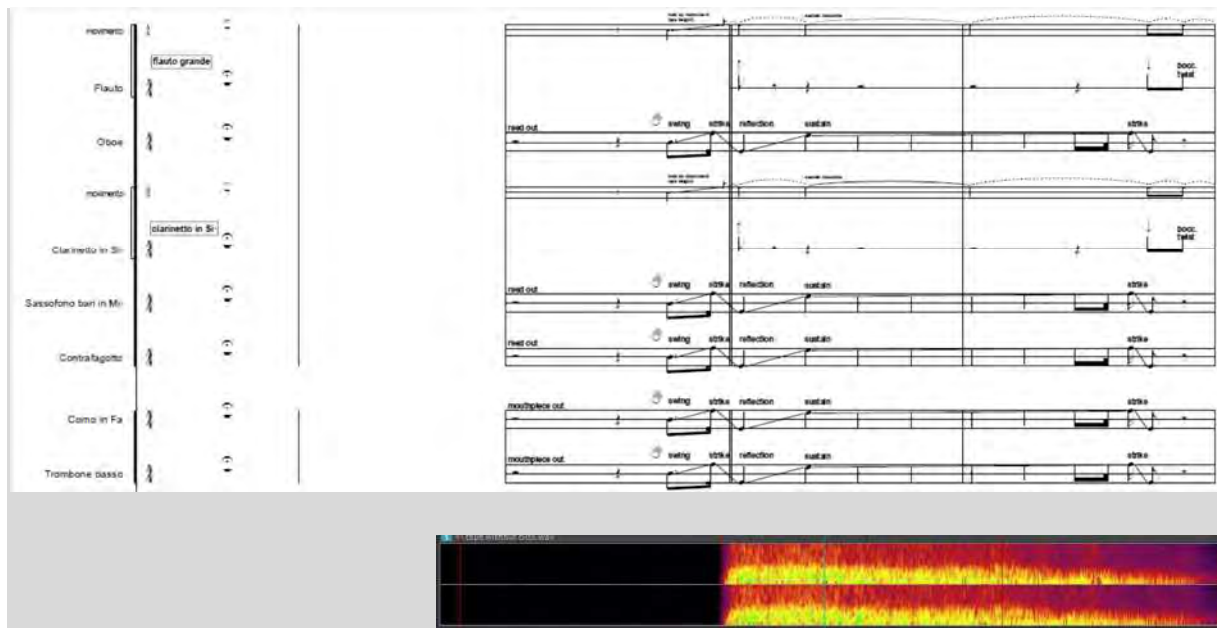
Graph 29. The "response" of the gesture-process in the audio-playback (represented on the sonogram) to the "point" gesture-aggregate in the orchestra (represented in the score). *visibilium et invisibilium*, mm. 147-151.

The *audio playback* part sometimes plays the role of a link between stages (e.g. in the second part, when the homogenization of sounds in the part of the orchestra and the amateur ensemble is so advanced that the tape "expires" unnoticed and the orchestra continues). One can also mention the "modulation" function (in the harmonic sense, in Part III: by preserving the common sounds of the spectrum with *D* as the center of the tonal part of the orchestra part by B as a convenient, mediant connection to the *D sharp* as the 5th partial of the *B* series, which is the initial sound of the monody from *Credo III*, on which the fourth movement is based).

The layer of the volunteer ensemble is conceived, as I mentioned, not as a form of introducing topophonic trajectories of gestures, but as a means of designating or expanding the sound "spaces" in which the recipient is "immersed", as islands of sound, separated by backlights. It is therefore a form of a multidimensional audiovisual "picture". Despite essentially relying on the relationship of compatibility and supplementation with the tape and orchestra part (parallel quality of the sound material), the group of amateurs operates primarily with spatial differences, ensures the "absorption" of the recipient in the sound (also immersion in "rumbles" in the IV part), offers the possibility of observing performance activities "up close" (playing on objectophones, processing). This dependence on the orchestra and audio-playback parts is broken in the fourth movement, when the amateur ensemble plays alone

for a few minutes (with a very delicate accompaniment of the tape and the orchestra later joining in building the climax). [209]

Schaeffer's concept is founded on the perception of phenomena that can be objectified, but remain subjective in reception. It is difficult to study what is happening in the mind without being able to place within it an objective "observer" registering a stream of virtual images – scenes, gestures, sounds. This can be combined with PET scans, tomography, etc., but these are *ad hoc* solutions[210]. The second basis of Godøy's theory is cognitive science, in which he seeks communities of perceptual perception. For Godøy, empirical and psychic observations are important, such as: noticing the ephemerality of sound phenomena, multimodality of sensation, sensory streams (sound, image, touch) producing a solid existence in the mind.

The theory, otherwise controversial, of **motor imaging**[211] (or in other texts by Godøy and Leman called embodied **cognition**[212] or **embodied imaging**) states that **perception is an active simulation of movement**[213] **associated with any sensory impressions mediated by the body, which is processed in the mind** (does not require a directly audible audio source)[214]. Imagery is not a form of iconization or metaphorization, but a direct, subjective, first-person recreation of experience. It is a form of script, instruction (with variable resolution) for the implementation of some effective experience[215]. A similar imaginative process probably takes place in language – understanding of linguistic

[209] Originally, the amateur ensemble was intended to move in space (around the audience, orchestra, dancers), while the audio playback was to be implemented in an omnidirectional, eight-channel system; The realization that it would be another complication, an additional burden in perceiving the already submitted work, perhaps even a form of "gadget" was the basis for giving up the idea.

[210] R. I. Godøy, *Gestural Imagery in the Service of Musical Imagery*, [in:] A. Camurri, G. Volpe (eds.), *Gesture Workshop 2003,* Berlin, Heidelberg, 2004, p. 56.

[211] R. I. Godøy, *Gestural Imagery...*, *Op. Cit.*, p. 57; R. I. Godøy, *Images of sonic...*, p. 54.

[212] E.g. M. Leman, *Embodied Music Cognition and Mediation Technology*, CogNet, 2007; M. Leman, *Musical Gestures and Embodied Cognition*, [in:] *Actes des Journées d'informatique Musicale (JIM2012)*, Mons, 2012; R. I. Godøy, *Images of Sonic...*, *Op. Cit.*

[213] *Cf.* R. I. Godøy (et al.), *Exploring...*, *Op. Cit.*, p. 4. According to the authors, motion simulation will be either a fast, global "reproduction" of a sequence of actions or a slow local "zoom" of details, depending on the "resolution" of the imaging (unclear, approximate, sketchy). These "resolutions" are described as time scales (micro, meso, and macro), stretching between locality and globality of perceiving phenomena. At the same time, the very process of perceptual experience in reality and embodied cognition also plays out simultaneously on different time scales. The variety of scales is justified by the different nature and ways of perceiving local elements: style, rhythm, texture, color, modal/tonal features, expressiveness, body movement.

[214] Imaging as processing in the mind is not abstract processing of sensory data (manipulation of symbols). *Cf.* R. I. Godøy (et al.), *Exploring...*, *Op. Cit.*, p. 4; R. I. Godøy, *Gestural-Sonorous Objects...*, *Op. Cit.*, p. 160.

[215] *Cf.* R. I. Godøy, *Gestural Imagery...*, *Op. Cit.*, p. 56. In this sense, it comes closer to the concept of Chiona's audiovisual contract, which enables the creation of additional value above the layers of media, which is the "identification" of the recipient, involvement, etc. on the basis of intermedia works, especially movie.

expression occurs not only through the generated grammatical structure, but also through gestures accompanying the utterance.[216]

Imagination has many features in common with real experience[217], Godøy and Leman define it as "functionally equivalent" – they are feedback systems, mutually "illuminating" each other[218] – so it will be fruitful to study the relationship between gestures and sound in both real experience and embodied cognition. It is also a social (cultural) phenomenon, explaining many musical phenomena (recalling and re-"living" sound experiences in the mind, the possibility of inventing new, yet inexperienced "by the inner ear" sounds, often ordering them with grammars of motor experiences, e.g. the experience of breathing-exhaling or the air ceiling in the lungs, both regulating the form and length of sound phrases); and also reading them (the phenomenon of reading the score "gesturally" – that is, not focusing on the classes of individual elements, but depicting larger synthetic wholes, as a script, script – with different "resolutions"; similarly the opposite process – instrumentation).[219]

The hierarchy of experience is linked to its levels and "resolutions" – it allows to capture and control the entire activity, but also successive layers of detailed "co-articulation subroutines" – where separate local actions merge into global activities[220]. Embodied cognition understood as a **script** (commands and predicted outcomes) is a gesture/action-oriented ontology. **Embodied interaction**, in turn, is a prediction based on the psychoacoustics of perception, but also taking movement for sound.

Godøy and Leman argue that the association of body movement with music is universal and independent of the level of musical training, because most people have extensive experience in linking sound to movement[221]. To enable motor imaging, a motor **imaging engine** is necessary, which is what actually triggers and sustains sound images in

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[216] According to observations in the field of language sciences, learning to understand the grammar of a language is in fact the process of learning to imagine the gestures of language that accompany utterances, not only enriching it rhetorically, but probably being the evolutionary basis of spoken language. *Vide*: A. Kendon, *Gesture. Visible Action as Utterance*, Cambridge, 2015.

[217] Godøy points out: (1) that certain areas of the human brain responsible for motor experiences are activated along with areas responsible for musical imaging; (2) the McGurk effect, perceptual illusion: when you see a gesture that produces sound, you can believe that you have heard something other than what the acoustic signal actually contained. *Cf.* R. I. Godøy, *Gestural Imaginery...*, *Op. Cit.*, p. 57 *NB* some composers base their concepts of gestures on this illusion, e.g. Adam Porębski distinguishing gestures of play and stillness, or Wojciech Błażejczyk in his gestophone, in which, through performative movement, reproduction and granular processing of samples of extended performance techniques, visual (performative) types of gestures are secondarily useful, necessary to extract these sounds from actual, physically existing instruments.

[218] R. I. Godøy, *Images of Sonic...*, *Op. Cit.*, p. 55.

[219] R. I. Godøy, *Gestural Imagery...*, *Op. Cit.*, p. 58.

[220] R. I. Godøy, *Images of Sonic...*, *Op. Cit.*, p. 56.

[221] They argue their positions with experiments similar to the previously discussed Truslit experiment. *Cf.* R. I. Godøy, *Images of Sonic...*, *Op. Cit.*, p. 56.

the mind[222]. **Motor equivalence**, on the other hand, is the use of flexible, alternative performance as part of imaging.

The presence of both correlates: the sound object and the embodied cognition makes it possible, according to Godøy, to distinguish the **category of gestures as an element mediating between music and other systems of thought (signs).**[223] Thus, despite the fact that experience, including sound experience, is multimodal, it is necessary to separate it from each other: sensory (kinetic, somatic) from action images, from images of the effects of actions, from the image of the "choreography" of the executive generation of sound, from the image of the sound phenomenon itself (also graphically expressed). Due to this fact, Godøy expresses the hypothesis that the meaning (content) of music is the result of ubiquitous images of gestures (scripts, hierarchical synthetic structures) – the generation and transformation of gestures through sound and decoded during the perceptual process (listening and cognition of the "grammar" of gesture language).

Godøy recognizes that motor experience (effort-rest, energy accumulation, speed thresholds, phase transitions with tempo changes) schematically limits the generation and transformation of musical qualities (e.g., melodic grouping in the shape of tension-relaxation) [224]. Therefore, the separation of the executive gesture and the sound it generates as separate, though closely related qualities, leads to the generation of more effective musical gestures: it forces the need to know about both physiological and cognitive (e.g. psychoacoustic) schemes; forces the study of the relationship between gestures and sound features; and allows for reflection and (limited) prediction of potential directions of motor imaging – musical imaging as a simulation of gestures[225]. A musical gesture is a category belonging to a musical sound, just like gesture belongs to a sentence expressed in language.
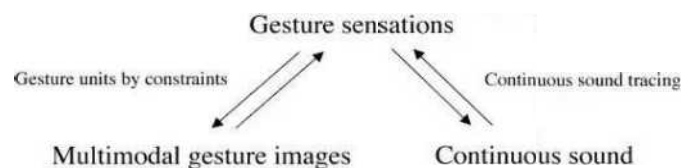
Graph 30. Godøy's gesture reading schemata.[226]

Godøy's concept somewhat clarifies the embedding of gestures in the context of Peirce's semiosis (as a higher-order assembly, where secondarily S replaces the originally denoted object O, and I denoted S)

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[222] R. I. Godøy, *Gestural Imagery...*, *Op. Cit.*, p. 55.
[223] R. I. Godøy, *Sonorous Objects...*, *Op. Cit.*, p. 163.
[224] R. I. Godøy, *Gestural Imaginery...*, *Op. Cit.*, p. 59.
[225] M. Leman, *Musical Gestures and Embodied Cognition*, *Op. Cit.*, p. 7.
[226] R. I. Godøy, *Sonorous Objects...*, *Op. Cit.*, p. 151, R. I. Godøy, M. Leman (eds.), *Musical Gestures. Sound, Movement, and Meaning*, New York, Oxon, 2010, p. 13.

O: multimodal image of a musical gesture (of an executive action and the resulting sound of a specific quality) – **S**: sensation of a gesture – **I:** sounding, continuous sound

At the same time, mutual ties are created: the marking process – the perception of gesture elements according to the constraints (between O and S), and the interpretation process – continuous tracking of sound (between S and I).

Hence, the musical gesture according to Godøy is a " **mental" universal pattern of action that produces a sound that is encoded in music or that results in response to music**[227], [228]. The essence of the movement is its continuity – several consecutive actions can be perceived as one coherent gesture, movement understood as a "script" of action. The double intentionality of the empiricism of the gesture is also revealed here – the change in the physical position of the object, the body can be described:[229]

(1) objectively (**motion**) kinetically, temporally, spatially (sound as the shape of an acoustic wave, in a specific time, timbre, topological space, etc.);

(2) subjectively (**action**) (intentions, goals, gesture expression);

(3) in the context of the **meaning** it evokes (understood as the mental activation of the mind, depending on the context of the speech and the recipient's personal experience in intermodal communication).

That is why these phenomena are called not movement, but gestures – they blur the difference between Cartesian sensory and metaphysical experiences by crossing observed actions and mental experiences[230]. These three elements of gesture, highlighted by Godøy, meet with reflection by other authors of gesture theory, distinguishing triads of elements: subjective, objective and communicative or phenomenological, biomechanical and functionalist[231]. The "rotating" role of meaning is revealed here.

Godøy's gestures are further divided in two ways:[232]

(1) performative gestures (body movement accompanying the sound of music – gestures of those who perform);

(2) perceptual gestures (those who receive – gestures of listeners, dancers).

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[227] R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, pp. 16-17.
[228] The question remains to be whether it can be an unconscious form of musical universalism. *Cf.* P. Podlipniak, *Uniwersalia muzyczne*, Poznan, 2007.
[229] R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, p. 14; 17-19.
[230] *Ibid.*
[231] *Ibid.*
[232] *Ibid.*

According to Godøy, sound gestures (in music) reflect gestures that produce sound (hand movement, silhouette positioning, etc.). They are possible mainly due to the community of dimensions – space-time[233]. Hence, it can be concluded that gestures understood in this spirit, due to the adoption of the paradigm of embodied cognition, despite the reference to sound objects with monadic characteristics, do not rather fit into the musical work itself, but externally realize this work and refer to it. They are therefore a reality external to it, transcendent. Nevertheless, I think the definition and methodology adopted, which, when applied appropriately, significantly illuminate the understanding of the immanent gesture as embedded directly in the work.

2.6. Musical gesture – perspective of Denis Smalley

A specific methodological response for Schaefer, and later Hatten, as well as Godøy (an answer that both authors do not seem to notice, and which may constitute a footbridge agreeing on some threads of their radically immanent [founded on musical "classics" and *virtual agency* theory] and transcendent [founded on performativity and embodied cognition] theories), can be, already presented in the 80s of the last century, Denis Smalley's concept of spectromorphology and a proposal for its description.

Smalley, defining **spectromorphologies** eclectically (in the form of gestures and textures), obviously refers on the one hand to Schaeffer (spectrodynamics), but at the same time to various semiotic systems and scientific disciplines (visual, linguistic, biological, medical, geological), which he explains by the multimodality of musical experience itself or its description oscillating between the metaphors of experiences and senses, and the invention of new concepts for defining sound phenomena. [234] Therefore, it is good to support spectromorphological observations with transcontextualism, intertextualism: recognizing sources and identifying the recipient with them, searching for the context from which the gestures were taken, and reinterpreting their meaning in a new context. [235]

Spectromorphology by name refers to morphological (shape, structure, energy), spectral (pitch-timbre), but also psychoacoustic (perceptual), based on criteria potentially understandable to all listeners, i.e. cognitive experiences[236]. It cannot be narrowed down to either the compositional technique or method (it's how the composer perceives the work –

[233] M. Leman, *Musical Gestures and Embodied Cognition, Op. Cit.*, p. 6.
[234] D. Smalley, *Spectromorphology: Explaining...*, *Op. Cit.*, p. 107.
[235] *Ibid.*, p. 109.
[236] D. Smalley, *Spectro-Morphology and Stucturing Processes*, [in:] *Language of Electroacoustic Music*, Cambridge, 2007, p. 63

mainly as a skeleton and body, with certain ideas about the skin [237] – is far from the listener's perception – mainly the skin of the music, enriched with some premonitions, suspicions and close information from the areas of the skeleton and body expressed, for example, in the note to the work), nor the tool of analysis, description of the work (because, as it is founded on auditory perception, it gives too much scope for subjectivity): both conceptually (because it is not a systemic solution, rather a proposal for a direction of reflection, it is based on **intuitive categories of** comparing physical movement to sound movement, it does not focus on cultural references) or technologically (because the sonogram – as the main research tool – is not a representation of what the listener hears, so it remains too objective, and its analysis itself too subjective due to its reductive character). [238]

Spectromorphology is a way of thinking that could only come with the electronic revolution, enabling repeated listening to the smallest fragments of a work, rather than being attached to perceiving it in its entirety during a musical experience (e.g. during a concert) and after it, out of necessity, "simulating" it in the mind. Thanks to this, a kind of "zoom" of the viewer's perception into the work was possible, without having to limit oneself to *the écoute réduite* of the ephemeral tissue of the whole work, it can with much greater precision transition into a musical experience by directing the perception to the internal features of the work with multiple repetitions of small fragments. [239]

The main subject of spectromorphology are **the internal features of sound events and their relations, but also external relations located outside them, in the form of cognitive experiences**. These intrinsic features of sound events are motion and processes (relationships between the source and cause of sound) seen as energetic formations that can suggest real or imagined movements in physical space.[240] According to Smalley, internal and external are interactive, feedback. An outward attitude in culture is necessary for the internal to signify. The internal relations defined by the composer also determine the impact of external messages on the listener. Smalley himself states that technological or procedural thinking and is redundant as not carrying perceptual information.[241]

Although spectromorphology is derived and "invented" for electroacoustic music, Smalley himself notes that it can also be applied to other composers "which are more concerned with spectral qualities than actual notes, more concerned with varieties of motion and flexible fluctuations in time rather than metrical time, more concerned to account for

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[237] I draw a parallel here with Grisey's concept of time. I think this comparison can also be applied to other synthetic systems and parameter relations in the musical piece. *Cf.* G. Grisey, *Tempus ex Machina: A Composer's Reflections on Musical Time*, [in:] *Contemporary Music Review*, vol. 2, 1987, p. 239 and d.

[238] D. Smalley, *Spectromorphology: Explaining...*, *Op. Cit.*, pp. 107-111.

[239] *Cf.* H. Lehmann, *Cyfrowa rewolucja…*, *Op. Cit.*; D. Smalley, *Spectromorphology: Explaining...Op. cit.*, p. 111.

[240] *Ibid.*, p. 110.

[241] *Ibid.*, pp. 108-109.

sounds whose sources and causes are relatively mysterious or ambiguous rather than blatantly obvious." [242] The founding of thought on Schaeffer's theories, including *musique concrète*, immediately redirects to use in the framework of Lahenman's *musique concrète instrumentale*,[243] and further founding spectralists (Grisey, Tristian Murail, Jonathan Harvey) and Iannis Xennakis[244] mainly due to its spectral and textural complexity, and the phenomenon of "instrumental synthesis" present there – the production of a type of hyperinstrument – which is why Smalley has less cognitive value He recognizes in traditional, jazz and popular music, but taking care of the principle that perception transcends national idioms, idioms of style, and potentially the epoch, or in general the category of belonging to the cultural circle.

To understand Smalley's approach, one should familiarize oneself with the nomenclature of spectromorphology:

(1) **Source bonding:** the subjective, individualized memetic process of identifying internal and external relationships. The natural tendency to perceptually associate sound with its supposed source (real or imagined[245] emitter) and cause (whether natural, cultural, human action or not) and to group them according to their related origin.[246]

> Example:
>
> **Source:** the sound of the sulphate tip of a match rubbed against sandpaper –
> **Cause:** deliberate friction by man to turn on the light (contrary to Smalley's

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[242] *Ibid.*, p. 109.

[243] *Cf.* H. Lachenmann, *Typologie sonore de la musique contemporaine*, [in:] H. Lachenmann, *Ecrits et entretiens* transl. M. Kaltenecker (ed.), trans. M. Pozmanter, Geneva, 2009, pp. 37-59; M. Tsao, *Helmut Lachenmann's 'Sound Types', [in:] Perspectives of New Music*, vol. 52, no. 1, winter 2014, pp. 217-238.

[244] However, I think that this method can also be used in earlier or aesthetically different musical pieces. As an example, I can point to *Coronation Te Deum* by William Walton, which, although it is based on a clearly "terraced" instrumentation (so there is no question of any "instrumental synthesis") and a clear homophonicity, attachment to the gravitations of traditional 3/4 rhythmics (along with interesting alternations of accents, metric and polymetric ambiguity – 3/4, 6/8, 2/4 – resulting from various combinations of rhythmic modules), to the "gravity" of the major-minor system, is nevertheless a fascinating study of the movement pendulum fluctuations between the layers of the work (causing a number of interesting reflexes of the character of embodied cognitions, e.g. bow reflex, etc.). I think that in any type of musical work one can point to or reconstruct Smalley's types of movement (even at the lower or lowest level of the assembly – so in single, small elements, not necessarily comprehensively), if only space is properly interpreted as a unifying platform. Smalley seems to be very attached to understanding physical space, and the musical "spatial" metaphors he tolerates stem from the iconic parallel in audial space with the topological space. *Vide:* I. Xenakis, *Music and Architecture* transl. S. Kanach, Hillsdale, 2008; I. Xenakis, *Formalized Music. Thought and Mathematics in Composition*, C. Butchers, G. W. Hopkins, J. Challifour, London, 1971.

[245] The protention of the anticipated connections between the heard sound and its confirmation by facts (seeing, touching, experiencing the source of the sound) is the basis for numerous manipulations, often used, among others, in film or games as an artistic means. Examples include the famous Pythagorean acousmatic veil or schizophonia – the splitting of the emitter and electroacoustic reproduction – described by Raymond Murray-Schafer, a phenomenon characteristic of everyday life in the city. *Cf.* R. Murray-Schafer, *The New Soundscape. A Handbook for the Modern Music Teacher*, Toronto, 1969, pp. 43-47.

[246] D. Smalley, *Spectromorphology: Explaining...*, *Op. Cit.*, p. 110.

intuition, escaping from all forms of literal images, meanings, etc., in my deepest conviction the intention of this friction as a vector model of the process is important for later surrogacies – whether it is done calmly, precisely, obsessively, compulsively, whether it aims to achieve an effect, whether it is "circulation" without achieving the goal).

Source bonding is beyond the composer's control. The spectromorphological description does not take into account the interpretation of source bonding in terms of meanings, expressions and psychology that remain "outside", although on the basis of spectromorphology elements can be distinguished that are subsequently subject to interpretation. At the same time, spectromorphological description is a peculiar perceptual, subjective interpretation, therefore it does not belong to a strict analysis (and thus to what Godøy describes as an "action");

(2) Gesture: the basic unit of connection between what is internal and what is external – is a sound-forming trajectory of physical energy of action, or rather their chain, which connects the cause with the source in a uniform spectromorphology. It is sensual, visual, auditory[247], proprioceptive (associated with muscle tension and relaxation, effort and resistance – these features always "stay" in it, on their basis we can deduct from the information contained in the trajectory as to the essence of the gesture, its source and cause).[248] The gesture is perceived as a succession, a compact, dynamic figure, with a narrative character, linear, directed development of the course; carrier of movement and energy; cause-effect. The basic unit of a gesture is a single sound (e.g. a note), a coherent unit of low hierarchical level, the accumulation of which forms the outline of higher-order gestures. [249] When describing gestures, Smalley refers to constructions determined by the breath (periodic structure, proper sound-arrow-noise). Weak gestures have a low reference to motor qualities (high-order surrogacy). It is difficult to determine a consistent (systemic) minimum density of the gesture (structure of altitude, pulse). [250] The score is misleading in this respect: the notes can be read as part of the gesture, but not the gesture itself. The gesture does not have a fixed structure of hierarchical organization: therefore, it is necessary to

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[247] *Ibid.*, p. 111.
[248] This seems to be a general spectral tendency, developing at the turn of the 60s and 70s, which can be seen, for example, in the legend of the score *Periodes* and *Patriels* Gérard Grisey.
[249] *Ibid.*, pp. 112-113.
[250] *Ibid.*, p. 113.

constantly refer to global listening, and not to individual elements. They can be applied to smaller or larger time spans or higher structural levels;[251]

(3) **Surrogacy of gestures**: the distancing (detachment) of the source and cause of sound from sensorimotor and psychological experiences.[252] Surrogacy resembles Peirce's semiosis, which is why I present it below:

First order surrogacy:

O: primary phenomenon, gesture (with source and cause) – S: sounding gesture (preserving the source and cause) – I: composer ("translating", "instrumentalizing" gesture into sounding gesture; recognizing and exploring musical potential; use at the stage of work on the work).

Second order surrogacy:

O: sounding gesture – S: sound structure in a musical work – I: recipient (identification based on cognitive experience; subjective certainty about the reality of the source or cause).

Third order surrogacy:

O: sounding gesture – S: sound structure in the musical work – I: recipient (based on the process of inference or imagining; uncertainty to the reality of the source or cause);

(4) **Texture**: succession perceived as a long-term process, a dispersed, multithreaded course, static, structured on the basis of the structure of Materia.[253] Texture movement does not mean that lower-order units can be isolated within it;[254]

(5) **Relation of gesture and texture**: Smalley's description resembles a figure and background within the framework of *Gestalt* psychology. Its designation depends on the context. Described in both the dialectic of homogenization and polygenization.[255]

[251] *Ibid.*
[252] *Ibid.*, p. 112; D. Smalley, *Spectro-morphology and...*, *Op. Cit.*, p. 83.
[253] *Ibid.*, pp. 111-112.
[254] D. Smalley, *Spectro-Morphology and...*, *Op. Cit.*, p. 82.
[255] *Ibid.*, pp. 113-114.

2.7. Gesture in relation to the philosophy of Maurice Merleau-Ponty

The twentieth century resulted in extensive phenomenological reflection, especially of great philosophers – Edmund Husserl and Martin Heidegger or in Polish aesthetics Roman Ingarden. In their works, there is a re-evaluation of the previous understanding of the dichotomy of matter (body) and form (mind), and consequently the synthesis of the hitherto separate paradigms of empiricism and intellectualism.[256] This was followed by a new momentum in the discourse of the philosophy of language (speech), meaning and sign, and value. In the orbit of these considerations there is usually some reference to various types of movement as a topos, pattern or warp, and finally a separate expressive phenomenon. The most prominent representative of this French trend is Gilles Deleuze, who creates together with Felix Guatarri. They laid the foundation for a sweeping philosophy focused on the problem of meaning and movement – human movements, thought movement (transcendent empiricism), *rhizomes*. Their philosophy left a strong mark on twentieth and twenty-first century composers, including spectralists led by Grisey.

A special kind of phenomenological thinker is Maurice Merleau-Ponty, a presemioticist, a critical continuator of Husserl's thought, and at the same time in a certain way the heir of Herder, known as a philosopher of ambiguity and introducing directly into his considerations a gesture (the one understood in general, and not specifically musically), a special kind of interpretation of movement as a way of breaking Cartesian dualism. Gesture is one of the most important phenomena of expression – the **phenomenon of meeting two equal subjects, reciprocity of reactions, creation of a common experience, the world**. Music was not the main subject of the philosopher's interest, but a number of his concepts (m.in. **gestural theory** of linguistic expression) developed on the basis of linguistic experiences, visual arts and dance can be applied respectively due to the fact that, as a rule, they refer to the sensual experiences of the participants of being-in-the-world and Herder's tradition equating thought with the way of expression both in language and in non-linguistic arts.

In Merleau-Ponta's *Phenomenology of Perception*, it firmly states that "La parole [the spoken word] is a genuine gesture, and it contains its meaning in the same way as the gesture contains its [meaning]." [257] This gestural theory of linguistic expression probably results from Merleau-Ponty's belief that through speech, as an act of crystallization (actualization and realization), man is able to stop fleeting thoughts. It is therefore a doubly

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[256] M. J. M. Tamayao, *Merleau-Ponty's Philosophy Of Language* [unpublished work].
[257] M. Merleau-Ponty, *Phenomenology of Perception*, C. Smith, London, New York, 2005, p. 183.

sensory activity (bodily, physical) and is analogous to other body behaviors (e.g. gestures). The meanings of speech and gestures are not cognitively understood, nor are they deciphered intellectually. The individual **understanding of the speaker's thought occurs "in" and "through" his speech and also through gestures**, although the gesture itself is directed "to".[258] Observed and understood gestures contain a certain direction, *modus*, purposefulness, which refer to separable and knowable fragments of the world with which they suggest a coincidence. The meaning of the gesture "intermingles with the structure of the world that the gesture outlines". [259]

As Mazzola interprets the philosopher, awareness of communication and meaning depends on the uncomplicated intuitive ability to "read" and "follow" the silent behavior of others. Like gesture, speech is that through which the subject occupies a position in relation to the world and causes for both speakers and listeners a structural coordination of experiences. A gesture **(a linguistic gesture) expresses a way of being-in-the-world.[260]** However, it is expressed, even creatively, on the basis of the required linguistic system (a publicly available set of meanings and structures) as a *sine qua non[261]*.

Merleau-Ponty points out an interesting theory concerning the contractual relationship between word and meaning:

> "These beginnings lie in the 'primary processes of signification' which is seen in the spontaneous eloquence of the living body as the non-conventional ground of the development of conventional meanings. The 'action which breaks the silence' is, originally, the mute but spontaneously expressive comportment of the living body to signify. Out of this capacity grows a conventionalized system which is a language. However, the significance of mute gestures is neither arbitrary nor conventional."[262]

In this sense – *nomen omen* – "meaning" does not preexist.

From the point of view of a musician and composer, the philosopher's concept of silence is also very important, especially in the light of the sentence quoted above, in which even a silent gesture breaks this silence. **Silence** for Merleau-Ponty is not just a prehistory of speech, but an emptiness waiting to be saturated. It can be said that this silence is "alive". It is a "speech before formulation", an absence whose presence almost tangibly weighs

[258] M. Szyszkowska, *Gest ekspresyjny jako element estetycznej interpretacji dzieła muzycznego*, [w:] *Sztuka i Filozofia* 2223, 2003, pp. 262-280.
[259] M. Merleau-Ponty, *Op. Cit.*, p. 216.
[260] A gesture in this way will therefore be an expression of a kind of inner expressive truth.
[261] G. Mazzola (ed.), *Op. Cit.*, p. 216.
[262] M. J. M. Tamayao, *Op. Cit.*

between interlocutors, "speaking", which immediately generates, drives and tunes the conversation[263]. So it is a gesture in itself.

Similarly, in his aesthetic discourse (this time concerning dance), the philosopher points to the property of artistic expression as strictly basic and pre-conceptual. For her, **meaning also does not preexist, and aesthetic experience is a manifestation of being-in-the-world**. Teresa Fazan emphasizes in a captivating poetic language corresponding to the language of an ambiguous philosopher:

> "As Merleau-Ponty observes, 'the whole man expresses himself in a single gesture.' This is not a banal sentence, but a far-reaching observation: the word gesture, in the basic sense having a bodily character, becomes a metaphorical approach to the sense-forming character of bodily expressiveness. It is a continuation of the phenomenologist's earlier theses: the meanings generated as part of the gesture are rooted in the whole existence of the subject. [...] In an expression that uses corporeality as the fundamental carrier of meanings, the overall dimension of the subject-body is also essential: when we look at it, we do not see an object, but a bodily whole, 'individual, affective, sexual expression'. The philosopher compares the reaction to bodily presence to that produced by an overheard sentence of one's own language: we-bodies unconditionally understand other-bodies. The body is the first instrument for giving and reading meanings, the silent language that exists before all speaking manifests itself in the expressions of the body, art and, as Merleau-Ponty writes, between the words of the philosopher. [...] In *The Phenomenology of Perception*, Merleau-Ponty writes that a work of art is a 'modulation of existence': on the one hand, it uses the horizon of possibilities that human corporeality naturally has, and on the other hand, it gives them the capacity to express meanings. As he emphasizes, '[works of art] are individuals, that is, entities in which expression cannot be distinguished from its object[264], expression from what is expressed, whose meaning we reach only through direct contact and who radiate meaning without leaving their place in time and space' [...] Similarly, Merleau-Ponty writes about the nature of the artistic gesture, noting that in order for the body to express at all, it must necessarily become expression itself and, consequently, what is expressed."[265]

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[263] M. Merleau-Ponty, *Op. Cit.*, p. 382.

[264] This statement is illuminated in a completely different context (intersemiotic translation) by Małgorzata Pawłowska, quoting the aesthetics of Langer's emotions: "Therefore, two basic concepts are interesting: expression and its ways of functioning in both works, and analogy, i.e. how expressive categories are translated from the first language into the language of the other work of art. [...] The expressive value of the musical course will be constituted on the basis of analogy, and its effect will be the 'expression of something', but also the 'expression' – that is, that which becomes an immanent feature of the other, expressive work." [translation after Pawłowska done by me]. Pawłowska notes that at the moment of juxtaposing expression, analogy and general dramaturgy, it precipitates *Tertium comparationis*. *Cf.* M. Pawłowska, *Maeterlinck/Astriab/Ślepcy. Od dramatu literackiego do dzieła operowego*, Poznań, 2018, p. 189.

[265] T. Fazan, *Fenomenologia i performatyka gestu w tańcu współczesnym*, [w:] *Przestrzenie Teorii*, 29, Poznań, 2018, pp. 215–249.

To quote Merleau-Ponty, "how habit resides neither in thought nor in the objective body, but rather in the body as a mediator of a world." [266] The essence here is, I think, the theory of *réversibilité* ("which is the ultimate truth") through which the relationship knower-known is described, as well as the dependence of cognition on entanglement in the known – its meanings and objects. The subjectivity of cognizance (individual *gνῶσις [gnōsis]*) is equated in objectivity with knowledge (*ἐπιστήμη [epistēmē]*) and experience, universal belief (*δόξα [doxa]*). The body and its reactions thus become a tool for examining the corporeality of the world as a measure and pattern, and at the same time testifies to the necessity of entanglement in this world – including its meanings. [267] The mediation between bodily entities (objectively and subjectively described) and meanings (senses) occurs through intention (the possibility of expression, the possibility of articulation), which externalizes these meanings.[268]

Merleau-Ponty's thought is thus very convenient for artists and art theory – it perceives experiences clothed in power that semiotics does not know. It is an ally of the paradigms of interiority, and thus an explanation of Hanslic's "sound forms in motion" without resorting to defining meaning and signification, while at the same time strengthening creative potential. It is therefore a starting point for Mazzola's gesture theory, and consequently for all *HCI* sonification trends (e.g. the musical use of Kinects). As part of the phenomenology of gesture, the French pre-semiotic school developed important mathematical approaches. The first of them was expressed by Charles Alunni[269], who pointed out that the understanding of gesture should be treated as an exchange, a transmission of gestural information. Alunni's gestures serve not only for communication, but also give meaning to themselves, producing a series of rules on the basis of which this meaning is decoded. Alunni thus states that "It is not the rule that governs the diagrammatic action [ornament], but the action that causes the rule to emerge."[270]

The second of them was expressed by Gilles Châtelet, who combined phenomenological freedom of description with mathematical inspiration (his considerations are based on nomenclature taken from mathematical sciences) and precision of expression. He radicalized the presemiotic approach to gesture in his work *Figuring space*: gestures are unambiguously not identical to their graphic representation (diagram), but are wild "vibrations", and through these diagrams they can be overpowered and "dismantled".[271] Thus, he suggested a specific paradigm in which the full and proper meaning of the gesture

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[266] M. Merleu-Ponty, *Op. Cit.*, p. 167.
[267] M. Gołębiewska, *Sensotwórcza rola ciała w samopoznaniu według Maurice'a Merleau-Ponty'ego*, [w:] *Teksty Drugie*, 2004, p. 238.
[268] *Ibid.*, p. 246.
[269] G. Mazzola (ed.), *Op. Cit.*, p. 861.
[270] *Ibid.*, p. 861.
[271] *Ibid.*, p. 862.

is perceptible to understanding only in its proper context, that is, its "natural environment", at the moment and presence at its execution, in which even the smallest nuances are perceptible, and even the most far-reaching mathematical and physical analysis weakens the power of this gesture. However, this paradigmatic shift can also be interesting, because gestures can be transformed from their ontological, creative context to a schematic process.[272]

Merleau-Ponty's observation about the separation of two "speaking" orders: absence and presence, "silence" and *lógos* as a break in this "silence" I see as the possibility of converging these two channels of communication, just as the orders of iconicity and metaphor, materiality and semantic converge. On this basis, I assume the creation of gestures both expressible through sound and within other systems, as equivalent in the work. Thanks to this, I can achieve the impression of a "synchron" or "weave" layers of experience and layers of meanings, both sound and non-sound. After all, it is about those situations when the sound lasts but "is silent" (as a subordinate layer), while another layer "speaks" gesturally – an image, a logos or movement. This is particularly important for me in the II part of the piece, where the presence of dancers (performers) is made possible and the gestures of the musicians introduced, which, although derived and "extended" in relation to purely performance gestures and their visual qualities, do not mean anything concrete – iconically, metaphorically or emblematically.

On the other hand, as I have already mentioned, it is very important for me to treat gestures as "arks" ("the whole man expresses himself in a single gesture"), and the attitude of not establishing a uniform interpretation (*libretto*), but creating "weaves", contexts. In this, however, using symbolism, semantics and meaning, I avoid constituting the specific of the above. Therefore, the meaning of the work does not preexist (even I, as the creator, am not able to fully control it), but is founded because of the relationship with another person who gets to know individually, individually according to his own resources of knowledge and experience – direct conviction (*doxa*) in conflict with descriptive knowledge (*epistēmē*). This intuition about the equalization of these two resources of knowledge, sensations, beliefs as equivalent leads to its effects in the adoption of an adequate creative and analytical method.

Presemiotism is often understand as limited to escaping from concretizing meaning or from introducing meaning at all. But it is equally a question of perceiving meanings by reducing them to the perspective of the body's reaction as a basic meaning measure all

[272] *Ibid.*, pp. 862-863.

others. Merleau-Ponty's approach is both the basis for distinguishing gestures in relation to bodily properties, but at the same time (the concept of *réversibilité* in connection with Tagg's internalization and externalization) for building a hypothesis about precultural forms of gestures to which all, even cultural ones, can be reduced. Merleau-Ponty, together with Smalley, suggested the idea of the need for Occam's razor as a tool to organize and integrate creative processes.

2.8. Musical gesture – perspective of Theodor Wiesengrund Adorno

"The source of music is a gesture, closely related to the source of crying. It is a gesture of relaxation. In the course of this gesture, the tension of the facial muscles subsides, which, while turning the face actively towards the environment, at the same time cut it off from it. Music and crying open the mouth and give vent to a blocked humanity. [...] Melting in tears and in music in which there is nothing human, man experiences the flow through himself of something separate from himself, which until now separated from him by the barrier of the world of things. Crying, as well as singing, man enters into an alienated reality. [...] All music in a dying world, even the most justly dying, expresses the gesture of a being who returns, not the feeling of a being who waits."[273]

This is the first understanding of gestures according to Adorno, in whose writings one can find this slogan many times, which seems to appear in different contexts and for this reason receives slightly different ranges of meaning. [274] Allowing for a cursory analysis of the views of the philosopher and aesthete, one can very cautiously distinguish at least two such meanings of "gesture", which are in constant connection with the paradigm of musical material: (1) gesture in the abstract sense, made by the creator in and through the work of art (as its effect or exemplification of ideas, will, etc.), or establishing the work (as its source), (2) **gesture in** the **reproductive sense**, technically, as a form of "Röntgen photograph" of a musical work, its structure and exemplified through material and notation. At the same time, the gesture, derived from the performance of music, playing, becomes only a full-fledged element of the composition through the work of the composer – Adorno seems to ignore the performative aspect of the gesture and notices that the musical gesture is transformed from

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[273] T. W. Adorno, *Filozofia nowej muzyki*, transl. F. Wayda, Warszawa, 1974, pp. 174-175 [translation after Wayda done by myself].
[274] Besides, the translator himself notices it, leaving Adorno *Gestus* as more intuitive than explicitly expressed; understood more as a "way", "behavior", "meaning" of music, than its respective styles; more as an "idiom" than a "notation"; stretched etymologically between "sense" and – *Direct* – "gesture". T. W. Adorno, *Towards a Theory of Musical Reproduction. Notes, a Draft and Two Schemata,* transl. W. Hoban, Cambridge, 2006, p. XX.

psychophysical and conventional activities. [275] Through a kind of casual reflection on the gesture, Adorno tries to reach both the core of the music and what has the power to invalidate it – hence the philosopher will describe such shapes of sound movement which, in his opinion, serve the development of music (Arnold Schönberg), and those that at least weaken it, if not lead to the aforementioned invalidation of music in general (Wagner). Without entering into a discussion with the philosopher, I proceed to report his views.

Adorno's reflection on the gesture is dressed in strong metaphorization and symbolism, but in discussing artistic truth, the autonomization of music and its potential for the future, Adorno emphasizes the anthropocentric idiom of aesthetics and art history. Hence, combining both spheres – symbol and humanism – in Adorno's writings on music we can find many such gestures: crying, tension, opening, closing, breaking, introducing, spirit progress, movement of the spirit (vertically up-down or in the shape of the propagation of waves) etc. These gestures remain considered basically in the perspective of specific composers and the space of time called history and future. Nevertheless, Adorno's reflection on the gesture is revealed in the context of the development of new music. And this is to be done by harnessing a technical element to art (although not changing it into science). [276] According to Adorno, Edgar Varése is a model of this attitude, who "opened the way for expressing precisely such tensions that aging new music ceases to know".[277]

At the same time, Adorno criticizes the gestures of the past, including the concept of Wagnerian *Leitmotiv* . In his opinion, a motif cannot be both a carrier of expression and a real musical gesture, because the emotional content is evoked too mechanically (in fact, it is supposed to be a pseudo-gesture of demonstrating a certain state), and the relationship between leitmotifs and designators of what they represent or characterize does not reach each perceptor in accordance with the subtlety and expectation of the composer (in this case Wagner). The second aspect of criticism is the problem of "spatialization" of music, i.e. the understood stopping of time fluctuations – in the case of Wagner by rhythmic ostinatos (or, as Messiaen put it more precisely, rhythmic pedals; jazzmen would call these structures simply *riffs*), which result from the ubiquitous "fanfare" structure. This stagnation, on the one hand, brings to mind "musical propaganda", and on the other, it transforms into a separate gesture – emptyness. Iwona Młoźniak writes about it:

> "With this concept, the philosopher defines a doubly empty musical movement: empty
> in terms of change in time and meaning, where the musical content is supplanted by

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[275] T. W. Adorno, *Teoria estetyczna*, transl. K. Krzemieniowa, Warszawa 1994, pp. 358-360.

[276] So it is a premonition of gestural currents focused around *HCI*, especially those "French-type", resulting e.g. from the activities of the Paris IRCAM.

[277] M. Krasińska, *Muzyka nowoczesna jako sztuka radykalna – filozoficzne ujęcie autorstwa Theodora W. Adorno*, [w:] *Filo-Sofija* nr 27, p. 205. [translation after Krasińska done by myself].

the sound effect. This results in a lack of musical development. In Wagner's case, the gesture changes into a motif, which leads to the staticization of the entire composition, since the musical material does not undergo harmonic or rhythmic development [...] "A gesture can be repeated and strenghened, but not 'developed' "[278] – every succession or change is therefore an illusion of perception. Adorno associates this feature of Wagner's music with mimesis in the sense of imitation without the possibility of reconciliation between imitation and imitation. This is the regressive aspect of music subordinated to gesture."[279]

Adorno's anthropocentric approach plays a major role here, as he claims that presemiotic intuitions (pre-social and pre-individual) remain engines rather than observers of development in music. According to the philosopher, this is what invalidates the simple theory of *mī́mēsis*, understood as on the one hand a deictic form (and therefore a gesture), and on the other as a primitive form of subjective empathy and compassion. For Adorno, the creative impulse involved in life (i.e. "being-in-the-world") is not only about reproduction (mapping), but about expanding in terms of sonic, kinetic and somatic experiences (that is, offering the recipient new conceptual or sensory knowledge resulting from the representation, illuminating the presented object with new light). Mimetic activity is always shaped by the spirit. The function of art is not simply to recreate what exists, but to engage current ideologies in the activities and show them in a new light through the logic of a changed lexis. [280] Paradoxically, therefore, I think Adorno agrees with Wagner on the general goal (music, including gesture as communication of a concept, an idea), although he deeply criticizes the ways and means adopted by the composer and the perspective adopted. In my understanding of this argument, Wagner simply, according to Adorno, ignores the perceptual ability of the recipient to receive the designed meanings, messages, *darstellungen*. Thus, atonal or twelve-tone music, although on a completely different level of composition (hierarchically higher), is an excellent way of communication, because through it pure abstraction and social criticism, including tonal music, are realized.

Adorno warns against the "spatialization" of music (stagnation, false movement – which is actually repetition, [281] not processing), which makes it resemble visual arts (plastic,

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[278] Inside quote from T. W. Adorno, *In search of Wagner,* transl. R. Livingstone, Verso, London, New York, 2005, pp. 23-24. Polish version translated by I. Młoźniak.

[279] I. Młoźniak, *Muzyka jako sztuka szczególnie filozoficzna? O filozofii muzyki T.W. Adorno*, s. 4-5, [w:] E. Starzyńska-Kościuszko, A. Kucner, P. Wasyluk (ed.), Festiwal Filozofii VII *Filozofia i muzyka*, UMW 2015, Olsztyn, 2015, pp. 117-132.

[280] H. Hogan, *Thinking as Gesture from Adorno's Essay as Form*, p. 9 [unpublished work].

[281] Adorno, however, does not seem to take into account that this repetition is a form of anthropocentric, perceptually focused fixation of gestures in short-term memory, allowing observation of the construction of new contexts. For Adorno, repetition seems to serve only the hedonistic perception of the beauty of sound structures, i.e. the composer's form of "cherishing" the viewer's tastes, and not conveying an important message to him. It can also mean the alleged "dilettante" of the composer, who in this approach is perceived as incapable of creating

painting) and testifies to the poor condition of the times and music itself (annihilation of its core, etc.). Simple gestures (gestures of a lower order, inherent in the work) used in music, strategies of their production and transfiguration (i.e. the act of composing, this action can also be perceived as a gesture of a higher order than simple gestures of a lower order) are, according to Adorno, exponents of deeper epochal tendencies, which in themselves are also gestures (gestures of the highest order). [282] Here it should also be concluded that it seems that Adorno does not mean a critique of music of a static nature (e.g. slow tempo or dynamistatic properties, with limited processing efforts), but music in which *mĭmēsis*, or even abstraction itself, is not a perceptual, communicative value, building a context, but only a introduced form, taken out of its context and not building (co-building) some new one.

In Adorno's abstract understanding of the gesture, there is another, strongly metaphorical, but weighty gesture. It is a gesture of breaking with tradition[283] – the Nitschean-Wagner one, which elevates art to an almost religious pedestal, and considers the artist a priest and a sacrifice at once. It is a gesture of despair and an attempt to get out of the crisis of autonomization, ossification, conventionalization, the trap of representation (performance), aestheticism. It is not a gesture of negation, but a gesture of response to another gesture – emptiness. Adorno emphasizes that symbols, metaphors (in language), and thus gestures tend to become independent in relation to their symbolic function in new art. Art uses, absorbs and exploits them because they have lost their original meaning, [284] thus growing into "speechless art".

The gesture of breaking with tradition has its culminating form noticed by Adorno in the gesture of Schoenberg's[285] rejection of tonality and has its rich context in the world of the early twentieth century: unfulfilled *fin de siècle*, on the threshold of two great wars, social changes, totalitarianisms (Nazi and communist), the emergence of popular culture (in the 30s and 40s as "era" of swing) and the cultural industry, all of which lead to Bourdierian symbolic violence.

> "Adorno glorified the abstract character of musical material, proving that there is real critical potential in it. He postulated the abandonment of the "trite communicativeness" of music, defining its relation to the world as negative: the more alienated music is, the

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"new" structures, plagiarizing himself, fixed formal schemes, idioms and other artists. This is probably Adorno's deep dislike for Igor Stravinsky.
[282] I. Młoźniak, *Op. Cit.*, pp. 4-12.
[283] A. Jarmuszkiewicz, J. Tabaszewska (ed.), *Tradycja współcześnie – repetycja czy innowacja?*, Kraków, 2012, p. 80.
[284] T. W. Adorno, *Teoria estetyczna*, *op. cit.*, p. 176.
[285] M. Pasiecznik, *Porno Adorno*, [w:] *Didaskalia*, t. 123, 2014.

deeper it represents social criticism. All the most important trends in artistic music of the twentieth century were created in the spirit of this philosophy."[286]

Thus, it can be seen that the hierarchical shape of gestures is also clearly visible through their transformations and assembly into higher-order units. It seems that the adoption of such a perspective illuminates another statement of Adorno:

> **"A work of art is the result of a process, as well as the process itself in a state of freezing**. It is what rationalist metaphysics at its summit proclaimed as the principle of the world, the monad: the center of forces and at the same time the thing. [...] Such an image of oneself is in any case imposed by tradition, an image of something living and authentic, which Goethe used to call *enteléchia*[287], synonymous with monad. It is possible that the concept of purpose, the more problematic it becomes in organic nature, the more intensely it has become drawn into works of art. As a moment of spirit embracing the whole epoch, intertwined with history and society, works of art lean out of their monadicism, although they have no windows. [...] The thesis about the monadological character of the works is as true as it is problematic';[288]

and elsewhere:

> "Divergent media find their unity, the unity of art as the right of their imitation. [...] Works of art are objects whose truth cannot be represented otherwise than as the truth of their interior. Imitation is the path that leads to this interior. Works of art speak like fairy godmothers in fairy tales: you want what is unconditional, let it happen to you, but in a changed form beyond recognition." [289]

Nevertheless, despite touching the issue of musical material momentarily, these considerations primarily concern gesture in the first, abstract sense. It is time, therefore, to look at the second position, expressed on the margins of the theory of musical reproduction.

Despite the criticism of the "flat" mimetic ontology, Adorno does not reject *mímēsis* in general, he treats gestures as forms of "Röntgenian photography" of a musical work, i.e. the mapping of all the elements hidden under the surface of the audible sound – context, contrast, construction. [290] All of them are rooted in musical notation – musical writing as a graphic trace of construction, "the dialectical equivalent of utterance." In this sense, the

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[286] *Ibid.*; *NB* Pasiecznik notes that this paradigm of musical material described by Adorno as "esoteric, alienated, negative, abstract" was invalidated in 2014 by Kreidler with the presentation of his musical theater *Audioguide*.

[287] ἐντελέχειᾰ [*entelécheia*] – the purposeization of the development of matter, determining the stages of development and contextually staged ways of existence. *Élan vital*. In a way, he meets *entelécheia* with the doctrine of the palingenesis of the world. *Entelécheia* very close ideologically to the aspect of the goal in a gesture Music.

[288] T. W. Adorno, *Teoria estetyczna*, *op. cit.*, p. 327 [translation after Krzemieniowa done by myself].

[289] T. W. Adorno, *Filozofia nowej muzyki*, *op. cit.*, p. 231 [translation after Wayda done by myself].

[290] D. Castro-Magas, *Gesture Mimesis and Image: Adorno, Benjamin and the Guitar Music of Brian Ferneyhough*, [in:] *Pace*, 70 (278), Cambridge, 2016, p. 17

notation is gestural, mimetic, because as a graphic image it "masks" the elements of the gesture. Adorno derives this understanding from the concept of cheironomic notation, although in the light of some new research this seems to be untenable.[291]

The notation, according to Adorno, has its 3 elements:[292],[293]

(1) **mensural**: denoting everything that is given unambiguously by means of symbols – e.g. the duration of notes (which can be reduced to objectively measurable elements, at the same time generating ambiguities, the disambiguation of which defines a neumic element);

(2) **neumic**: denoting a mimic, mimetic, or gestural structural element that should be interpolated from symbols (so we can say that it is a form of intention,

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[291] This argument seems to stem from the erroneous (although fixed in the writings of musicologists and music theoreticians) connection of the idea of the so-called cheironomic notation with the tradition of oral-performative transmission of the work (including cheironomy as performance, mnemonics – Guydon's hand triggering Sound "formulas" etc.), consisting in interpreting from the movements of the conductor's hands melodic movement, i.e. the emerging idiomatics of translating one into the other (understanding after Hugo Riemann, building, as we know, a universal theory of music). I made the same mistake in my master's thesis, accepting American literature from the middle of the last century, convenient for my assertions (*Cf.* J. R. Carrol, *The Technique of Gregorian Chironomy*, Ohio, 1955). The ambiguity probably lies in the too modern understanding of the concept of "conducting" of Gregorian chant and the status of its connection with Gregorian semiology. **The general consensus on the genesis of the notation seen in the movement and its form (conducting the singing chant) is acceptable** (as well as other factors of genesis of, for example, classical Greek accentuation, Egyptian, Babylonian and Byzantine cheironomy, or ecphonetic notation; reports from the musicological position of Constantin Floros, *Cf.* C. Floros, *The Origins of Western Notation* transl. N. Moran, Frankfurt am Main, Berlin, Bern, Brussels, New York, Oxford, Vienna, 2011). The point of contention is only the interpretation of the details of the nature of this movement, e.g. accentuation *ársis-thésis* on the move *ársis-thésis*. From the ethnomusicological point of view, but also from the point of view of cultural studies and art history, there is an interesting controversial interpretation of the Etruscan sarcophagus of the spouses from Villa Giulia in Rome or the Louvre in Paris, as a stage for performing music using the cheironomic method *Cf.* S. Haïk-Vantour, *The Music of the Bible Revealed* transl. Weber, D., J. Wheeler, Berkeley, 1994, p. 76. However, Gregorians are not familiar with the concept of "chironomy" or "cheironomy" as a semiological theory or notational tradition, but rather use the concepts of diasthematic and adiasthematic notation. Similar doubts were dispelled in a private conversation by Mariusz Bialkowski, who pointed out that the cheironomic notation could rather derive its name from cheironomics in a specific sense, "everything that is written on paper is cheironomic (because it is the fact of constituting something with the movement of the writing hand), such as a recipe, liturgical, theological and philosophical books, and finally music, etc.". Diasthematic notation marks the transition from the oral-performative tradition to the new epistemiological tradition (but nevertheless overlapping the previous chain tradition, so it does not exclude it and the "poetics" of transmission belonging to it), but it is rather not about the transition resulting from the graphic interpretation of physical movement to the movement of sounds. In this context, the clarity and convenience of the so-called cheironomic notation, as well as the resulting neumatic and mensural notation – as a function of x from y, determining the class of the passage of time (or rather the passage of the text) and the pitch class – which model has determined the way of notation to this day is all the more astonishing. Within the framework of this conceptual dispute, another problem arises – the scope of application of the term "gesture" in the case of notations and works of Gregorian chant. It appears to be a poorly explored area, although I found works in which phrases such as "melodic gestures [composed] for a given syllable are indicated". *Cf.* H. R. Strayer, *From Neumes to Notes: The Evolution of Music Notation*, [in:] *Musical Offerings*, vol. 4, no. 1, 2013, p. 2. I have the impression that the dispute referred to and described in this footnote is basically identical to the general dispute of the paradigms of internality and externality, described in chapter 1.2 of this work.

[292] D. Castro-Magas, *Op. Cit.*, p. 17 and next. *NB* The concept of notation according to Adorno meets, in my opinion, the concept of Grisey's time: as skeleton-body-skin; Godøy's gesture concept: movement-action-meaning; Tomaszewski's integral interpretation: realization-perception-reception; types of listening in Chion, etc. All of them notice a specific communicative value by using similar designations of concepts. **In this sense, I conclude that it can be said that the grammar of gesture (composing time, space and structures, but also the grammar of notation) is a similar inverse of the grammar of gesture (doing)-listening-analyzing, and interpreting, as perceptually focused.**

[293] *Cf.* T. W. Adorno, *Towards...*, *Op. Cit.*, *Direct*: p. 67, *Cf.* pp. 56, 63 and next., 158, 187.

sense; it contains a repressed and ambiguous mimetic element, refers to music in its immediacy, and therefore the task of musical notation is to strive for a synthesis between unambiguity and immediacy);

(3) **idiomatic**: denoting a musical-linguistic element, achieved by giving in each case the musical language (so it is on the one hand a form of grammar, but also a meaning).

Adorno concludes: "The task of musical interpretation is to transform the idiomatic element into the neumic by means of the mensural." [294] In this sense, notation is imitative, through sensory similarity there is imitation of musical symbols, and through non-sensory (mental) similarity there is imitation of ideas (non-musical). Therefore, the Adorno understanding of *mímēsis* is shaped by the category of *Darstellung* (presentation and representation) – meaning in the action of presentation, which implies both mimetic value (imitation and reproduction of the work of art) and semiotic value (realization and transmission of the immanent meaning of music).[295]

Due to Adorno's already mentioned claim about the rooting of musical gestures in performance (performative) gestures – although they are not the object of the philosopher's interest – two values should be noted here: (1) practical – musical notation should be "gestural", meet the needs of the performer, be a legible and communicative "script", a "record" of performance choreography – (2) rationalization (objectification) of gestures with expression through marking (symbolic function), [296] but also intuitively sensual (art in a sense imitates the gestures of the spirit). [297] Therefore, commenting on Adorno by Diego Castro-Magasa, he recalls the statements (apart from the already mentioned Hatten and Godøy) of François Delalande, a philosopher focusing on gestures in communicative terms – as meaning in interpretation (the phenomenon of the formation of meaning) [298] and at the same time a behavioral pattern (performative, especially on the example of Glenn Gould's performance) [299]: "gesture is a cross between observed actions and mental images".[300] Therefore, one **should not distinguish types of gestures, but expressive schemes (and therefore not only psychomotor patterns, but equally affective ones).**[301] This image can

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[294] This sentence in itself is reminiscent of Peirce's semiosis. At the same time, two paragraphs later, Adorno warns against fetishizing the musical text. *Ibid.*, p. 67.

[295] *Ibid.*, p. 61.

[296] *Ibid.*, p. 161.

[297] *Ibid.*, p. 170.

[298] F. Delalande, *Meaning and Behavior Patterns: The Creation of Meaning in Interpreting and Listening to Music*, [in:] E. Tarasti (ed.), *Musical Signification Essays in the Semiotic Theory and Analysis of Music*, Mouton de Gruyer, Berlin, New York, 1995.

[299] F. Delalande, *La gestique de Gould ; éléments pour une sémiologie du geste musical*, [in:] G. Guertin (ed.), *Glenn Gould pluriel*, Montréal, 1988.

[300] *Ibid.*

[301] F. Delalande, *Sense and Itersensoriality*, [in:] *Leonardo*, vol. 36, no. 4, 2003, p. 313.

express directly what Adorno escapes to express clearly: gesture and affect are two sides of the same coin; The executive gesture leaves a mark on the sound object.[302]

In the light of these interpretative remarks – but aimed at the reconstruction of Adorno's position – gesture is a form of bridges or planes unifying[303] between different positions: in this case between abstract gestures, mimetic gestures, and executive gestures (the body of the performer is always a present parameter, in the light of the functionality of musical gestures). Sound-forming gestures (which are not, as I have already mentioned, the axis of the philosopher's interests) are transformed into semiotic gestures acting with the power of embodied cognition (which is not a flat, Wagnerian mimesis) and *mī́mēsis* as a symbolic action (e.g. an abstract gesture).

In this way, Adorno, by determining the main features, nodal points, slogans of the musical gesture, which constantly recur in this work: movement, meaning, *darstellung*, intention, idea, hierarchy, perception, communication, transformation, also sets further questions: about the position of the subjects of the gesture, about the search for a plane unifying different understandings (what these bridges actually are), how gestures can be transformed, how they can communicate, what can express and, finally, what are the expressive schemes outlined by Dalalanda?

In addition to the general significance of Adorno's thought as an exponent of certain tendencies of much broader provenance, I do not pass indifferently around the problem of notation, as a key problem in the transmission between the composer, the performer and the audience. Musical notation except, I think, the requirement of adequacy and usability (ensuring a good balance between universality, convenience and explicitiveness[304]) and communicativeness (providing musicians with the comfort of including all the necessary information in a supportive, not difficult, way). In the case of gestures, especially those understood pragmatically or idealistically as present "in" (and not "outside") the sound structure, information is often scattered, requires interpretation, searching for levels of communication and differentiation.

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[302] F. Delalande, *Meaning and Behavior Patterns...*, *Op. Cit.*, p. 4.
[303] Borrowed by Castro-Magasa from F. Cox, *Notes Toward a Performance Practice for Complex Music*, [in:] M. Claus-Steffen (ed.), *Polyphony and Complexity*, Hofheim, 2002, pp. 70-132. The communicative domains of concept-recording-realization-perception should be treated as separate "languages" into which elements must be translated.
[304] A good example of this is, for example, the search for ways of notating microtones, which are not clearly resolved, as evidenced by the various dialectics of notation currently used: *Sagittal*, Carillo, Helmholz-Ellis, etc. This problem has been present since *Lamentations* Emilio de'Cavalieri, using the enharmonic ambiguity of the temperation system in force at the time (and the possibilities of his own instrument); in *Driads and Pan* from *Myths* by Karol Szymanowski expanding the timbre palette of the violin in this spectacular way; Notation *intonarumori* by Luigi Russolo; early graphic notation, including Lachenmann, Filidei, etc.

In this sense, it seems to me very interesting to propose notation developed in the PWM environment (let's call it that for simplicity), initiated by "classics" of modernity such as Henryk Mikołaj Górecki, Włodzimierz Kotoński, Witold Lutosławski, Krzysztof Penderecki, Witold Szalonek, Kazimierz Serocki, etc., and currently continued, for example, by Francesco Filidei or Clara Iannotta, where the score noted in principle traditionally, organized in bars, At the same time, it introduces a major visual change: bars in which the instrumentalists have "silence" are graphically eliminated, making the notation resemble a kind of irregular "islands". Leaving such graphic shapes makes you conscious, plasticizes, visualizes (at least some) flows and connections between structures. Therefore, being aware that the functionality of graphic notation also weighs on the legibility of gestures for performers, I used this method of notation in the score *visibilium et invisibilium*. The work, created in traditional notation, in my opinion, has definitely gained in clarity, by showing the gestural layers thanks to this method already introduced *ex post*.

For the same reason, the introduction of new symbolic markings is limited to a minimum (performance techniques are described mainly in text, and the notation of the choreographic part of the orchestra), although understanding the "slogans" of the presented techniques (I try to explain also "standard" in new performance, and "non-standard" from the perspective of traditional performance, e.g. philharmonic), requires familiarization with the detailed description in the score symbols and techniques explanations.

2.9. Observations in the margin of *epistēmē*

The choice of *epistēmē* presented in this chapter, I think, revealed the breadth and sometimes even contradictory nature of the approaches to the gesture understood specifically musically, but necessarily also supplemented by a more general reflection (Hugues de Saint-Victor, Merleau-Ponty). The way of developing or processing the understanding of gesture (in the general sense, not necessarily musical) is brought to a very high level of complexity, both practical and abstract, so from the point of view of this work, evoking these state of *arts* trends would be cognitively contributing a lot, although at the same time it would be a serious complication, I think, not necessarily decisive within the already complicated matter. That is why I omit a very important humanistic, linguistic and philosophical reflection (e.g. Adam Kendon – an interesting discussion in the musical context can be found in the monograph Godøy and Mazzola), reflections from the point of view of theatre or dance (e.g. the concept of ekphrase), ethnomusicological and sociological (e.g.

contexts of non-Western cultures, ritual gestures, including religious and magical ones) and many other threads requiring broadening.

At the same time, a paradoxical counterpoint emerges to this process of codification and hermeneutics – a multitude of often adversarial understandings causing a contextual difference in application. Therefore, quoting individual concepts of gestures in specific artists, theoreticians, performers, etc. also exceeds the modest capacity of inclusion in this work. Since my goal is to methodologically organize the principles of matter for the musical approach, it is with great heartache, dilemma and a sense of insufficiency that I have to make the necessary limitations.

Several times in this work, at least, I have noticed that there is a general consensus on defining music as the movement of sounds. I have just as noticed that at the same time there is disagreement about the definition of the references of this movement. That is, whether the gesture (1) necessarily refers to the movements performed by a human being, or (2) can refer to other material and immaterial beings, real and virtual.

In the concepts cited in the previous chapter, for example, one could clearly sense that towards (1) Merleu-Ponta (taking the perspective of studying and describing the world by the measure of one's own body), or Smalley (limiting spectromorphology only to music, in which only movement with reference to the experienced movements can be found), or even Godøy with Leman (due to the assumption of embodied cognition – recreating the experience *loco*, not a metaphorical or iconic representation of it). [305]

In turn, the position (2) is supported (which results from the reconstruction of views) by Adorno (despite the mediation of all gestures and notations in the performance gestures that produce sound – the composer is to seek the means of the deepest possible social criticism, preferentially in abstract forms), similarly to Mazzola, and, as can be interpreted, Hatten, moreover (paradoxically!) the same can be justified by Godøy's and Leman's claims (claiming embodied cognition as a script, or the matrix of human behavior, a peculiar image of cognitive experiences, described as a semiosis of a higher order, pointing with all its strength to its mental-perceptual provenance, [306] which at the same time allows the

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[305] The embodied cognition is supposed to result in the phenomenon of "empathizing" the recipients of music, mentally "playing" it and producing gestures with the body that reproduce performance activities – e.g. the drummer playing his favorite song.
[306] R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, p. 103 and d.

preparation of these experiences, e.g. inventing something that has never been experienced).[307]

Therefore, the question whether the gesture "is" "in the mind" as a form of the sign being read (also as a score or a compositional image) or "physically" "in the body" as a direct reproduction of experience, or even the eliction of specific bodily reactions (simulated compositional image, experience of performance) I leave unresolved as a question of an ontological nature. Being convinced of Ingarden's phenomenological approach, I would suggest an answer akin to Ingarden's answer about the nature of a musical work. [308] **Therefore, I take both positions equally seriously – that is why I consider the most presemiotic or *abstract* gesture to be semotic to be deciphered, and equally the most semiotic to be deciphered outside the sign systems.**

This is because both processes complement each other (this intuition will be the basis of Tagg's concept of gesture interconversion – discussed in chapter 3.3.2.3), explaining the phenomena of "translating" visual shapes into moving, sound, and others, expressing the necessity of reducing them on the one hand in a necessary way to one's own movement of the body, and on the other through thought processes (and through the need to adjust the spatial "perspective" of this movement), being able to compare them to any other material being, immaterial, imaginary, etc. (also internal reflexes, sensory experiences, having no physical substrate).

So when one speaks of gestures, the decisive factor is not so much iconicity as expressiveness (I don't think about things, I'm just thinking about things[309]); not so much systemativity as generativity (lack of a universal dictionary, including the difference from the theory of affects); not so much concretization as impressionism (it does not express the content read in a logical sense); not so much concreteness as abstractness (at least taking it out of its original context); Not so much generality as individuality (the lack of a universal unifying dictionary, ultimately reduced to the individual perception of the recipient). Even the most abstract gestures are elements of the grammar and semiotic system in the work.

To sum up *the epistēmē*, I don't build my approach to gestures in this chapter, because I devote an entire next chapter to this purpose (chapter 3). I will mention that the understanding I take in this work and the definition that follows from it (chapter 3.9), for the reasons expressed in *epistēmē*, is deliberately broad and complex, according to the Cadoz

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[307] This preparation of experiments is confirmed by *Casus* composing or *Casus* gestural reading of the score. The very fact of coding, matrix indicates a break from the original context and the need to mediate in some form in the communicative system of signs.

[308] R. Ingarden, *Op. Cit.*

[309] M. Rakoczy, *Koncepcja symbolu u Cassirera a powrót na „szorstki grunt": co Wittgenstein wnosi do badań komunikologicznych*, [w:] M. Wendland (ed.), *Historia idei komunikacji*, Poznań, 2015, p. 169.

and Wanderley hypothesis that the opposite (i.e., narrow and simple) cannot exist. [310] I express my own attitude to gesture in the fact that it can be applied both to the smallest indivisible structure – even a single note (as Smalley says), but also to the whole shaped movement (at the highest hierarchical level of the work, as a movement, process, and even style or epoch, as Adorno proposes). I recognize that in a sense all (created) works are to some extent (sometimes very flat and sometimes deepened) gestural, I see this in the fact that composers commonly accept **conceptualization** as a *modus operandi*[311]. Gestures are a communicative intermediary (both in semiotic and presemiotic attitudes; materialist, idealistic, relational or practice-oriented; Cassirers "reine Bedeutung" and the opposite meaning bound by its iconicity or metaphoricity; Lehmann's conceptual, concepcional and relational music, but also music understood by Hanslic as absolute). So I think that this approach is not so broad as to be a conceptual bag "for everything" that remains.

The concept of gestures, in my opinion, is a suggestive merging by "filling" the middle in the work, between micro- and macrostructure, setting a hierarchy and indicating the forces that affect both locally and globally in the work, idiom, epoch. In my opinion, the gesture allows Susanne Sontag's postulate to be realized, which was marked by Bruner's concept of effective surprise, uniqueness inherent in the work, not the system, later (chapter 3.2.4):

> "Today it is important to heal our senses. We must learn to see, hear and feel more. Our task is not to find as much content as possible in a work of art, nor to squeeze more content out of it than it has. We have to put the content aside to be able to see the work at all."[312]

Gesture as sensual, being itself able to be embodied cognition, is subject to the laws of psychoacoustics, yes, but due to the fact that it can be understood as an image in the mind, a matrix (script) of all, including corporeal, experiences, it can also be a sign and is subject to orders resulting from sign processes. Drawing on the sensual suggestiveness of sound phenomena does not remove the fact of perceiving them metaphorically. Taking sides impoverishes the experience of gesture.

It is not, however, Flussers "obsession with meanings" (chapter 3.3.2), nor the "obsession with objectification," reduced solely to objectively measurable parameters, or a subjective "obsession with experience." It is about the ability to look at the gesture, at the work with all three orders at once (objective structure, subjective perception and subjective-objective semiotic reception) and on the basis of results, adapting theory to facts, and not *a*

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[310] C. Cadoz, M. Wanderley, *Gesture Music*, [in:] M. Wanderley, M. Battier (eds.), *Trends in Gestural Control of Music*, Paris, 2000, p. 74.
[311] H. Lehmann, *Cyfrowa rewolucja…*, *Op. Cit*.
[312] S. Sontag, *Przeciw interpretacji*, transl. D. Żukowski, [w:] S. Sontag, *Przeciw interpretacji i inne eseje*, transl. M. Pasica, A. Skucińska, D. Żukowski, Kraków, 2012, pp. 25-26 [translation after Żukowski done by myself].

priori, facts to theories. "In the work itself – not outside it – lies the main causative cause of the work's impact, generating directions and categorical quality ensembles in particular phases: sound realization, auditory perception and sign (symbolic) reception of the work. It determines the categorical shape of its verbalization." [313] Therefore, when thinking about a gesture, Vilém Flusser's intuition is important to me, to treat the **gesture in the first place as a kind of "prosthesis", an extension of creative "hands", an evolutionarily created additional organ for realizing ideas**.

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[313] M. Tomaszewski, *Ekspresja utworu muzycznego jako przedmiot badań. Rekonesans w sferę twórczości lirycznej „Wieku Uniesień”*, [w:] *Teoria Muzyki*, 14, 2019, p. 24 [translation after Tomaszewski done by myself].

3. Musical gesture – reconstruction of its structure and functions

3.1. Object (construction) of a musical gesture

Having provided a solid general theoretical basis for the most important concepts of musical gesture currently under consideration (and some of the implications that can be interpreted from philosophical, aesthetic, and linguistic theories), I can proceed to discuss the abstracted and generalized (for the sake of breadth) concept emerging from these particular approaches. However, it is difficult for me to "divide", "disassemble" gesture into prime factors (although it is inscribed in the native method and way of thinking created by the Western civilizational circle), because its individual components create multimodal relations, both internal and external to the work of art in which they are founded. This synthetic property of gesture necessarily entails the problem of perception (communication), and its functions are determined by the capture of space. I am therefore aware of the shortcomings of the way I am describing, which is necessary, so to speak, to avoid the disintegration of the methodological approach.

3.1.1. Practical interpretation of the definition of Hugues de Saint-Victor

Godøy and Leman have proposed the most concise summary of Hugues de Saint-Victor's definition, on the one hand, preserving a respectable tradition of understanding and, on the other, opening up definitions to various applications, which is why I also accept them in principle, although retaining the right in some respects to make the necessary transformations (bearing in mind the reservations arising from chapter 2.9). This synthetic summary is based on a triad of values derived from Hugues, as it were, three layers of gestural perception:[314]

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[314] *Cf.* R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, p. 14. This structure is quite similar to that of Lehmann's musical work: concept-medium-oueuvre (as a form of aesthetic experience; *Cf.* H. Lehmann, *Rewoulcja cyfrowa…*, *Op. Cit.*, p. 134); or Alan Parkhurst Merriam's related and much more respectable distinction of the components of music research: material (motion) – concept (meaning) – aesthetic experience (action and perception) – economics (determining the functioning of music in the dissemination and use of technology); *Cf.* A. P. Merriam, *The Anthropology of Music*, Illinois, 1964). It seems, however, that, following in Smalley's footsteps, technological listening and economic hermeneutics explaining the technology used contribute little to the understanding of the musical structure itself, although it certainly explains some economic decisions,

(1) **motion** (the physical displacement of an object in space; a change in the physical position of an object that can be objectively measured);[315]

(2) **meaning** (mental activation of experience);[316]

(3) **action** (the intention of a movement that is aimed at achieving a goal).

This is, in my opinion, a good starting point for considering the components of the musical gesture, because it finds its three equivalents in other methodologies of quite different provenances, e.g. semiotic and audio-visual. As part of his concept of integral interpretation, as I noted earlier, Tomaszewski indicates the equivalents of these concepts (but changing their order): Realization (Movement) – Perception (Action) – Reception (Meaning). These three modes of perception also correspond to three modes of listening (perceiving) according to Chion: causal (analytical, performing the process of binding the source), semantic (interpretive, making a connection between the phenomenon and semiotic systems), and reduced (interpretive, consisting in detachment from the sources, causes and effects of sound, in favor of "synthesis" and description of qualitative values of a higher order). I have also already described the triads of Hatten, Adorno and others, with whom the connection of the presented perpective is clearly visible. Thus, certain axes of division are clearly drawn – along the objectivization and subjectivization of description, as well as the perception of internal and external properties of movement and expression. In this sense, all the practical components of Hugues de Saint-Victor's definition are ensured.

3.1.2. Motion as objective measurability

The motion value of the gesture, on the one hand, can be described as the motion of a part of the body (by its dimensions, topological placement, speed, intensity, description of

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e.g. *Casus* selection of instruments: how the sound, forms and generally repertoire of new works written for the Austrian ensemble are shaped in the environment of works commissioned by Klangforum Wien due to access to a rare instrument in the form of a contraforte (the equivalent of a contrabassoon with a lighter timbre, a different applicature system and a slightly lower scale; the same applies to the contrabass clarinet, contrabass flute, Veme *etc.*). This is certainly an important exponent, especially within the framework of the integral interpretation proposed by M. Tomaszewski, but it does not fundamentally affect elements such as trajectories of motion, meaning, etc. (affects to the extent that the availability and technical potential of instruments affect the composition of the composers).

[315] Here it is necessary to extend also to movements taking place in other spaces understood in Bielawski's way. The motion of sounds in the audial space is also objectively measurable (not only by physical description, e.g. in milliseconds and frequencies expressed in Hz, but also by using symbol systems of musical notation: note values, tempos, pitches on 5-line staff in the context of keys, etc.).

[316] Basically, I see the problem with this approach in the fact that both meaning and action are perceived—the experience of directed movement on the basis of which its "purpose" can be interpreted is also a mental activation of experience. That is why I distinguish these elements into: the objectified element (meaning, due to mediation in symbols, culture, the need for dictionaries, etc.) and the subjectivized element (action, due to the assignment of a grid of individual experiences as a descriptive matrix, moreover, depending on the day, mood, etc.).

its continuity, etc.), but also as well as a virtual trajectory of sound movement (by musically describable properties, as rhythmic values, pitches, harmonic, textural, timbral phenomena, etc.). In my opinion, attribution therefore depends on the adoption of the perspective of space and dimensions, determining the assignment of morphology and function.

The objectivity of this description results from the possibility of examining it with appropriate apparatus in accordance with established procedures, creative and research "grammars". At the same time, following Chomsky's thought, reality is able to generate and transform infinitely long procedures, which is why this objectivity is open. In this sense, progress in creativity and research is possible.

Let us take as an example a hypothetical situation: as an analyst, I can analyze Mozart's *Violin Concerto no 2* in G major KV 219 due to the procedures (both normative and descriptive[317]) of harmonic and formal analysis established by Mozart's contemporaries (e.g. Friedrich Wilhelm Marpurg, Heinrich Christoph Koch), or in post-factum reflection closer (Riemann), and further (Kazimierz Sikorski, Schenker, *GTTM*, Meyer, harmonic proposal by Hermann Erpf, Tadeusz A. Zieliński, Ernst Levy, etc.), but I can also base my analysis on establishing bowing, applicature (fingering), concretization and correlation of proportional tempi, establishing conducting schemes, studying recording spectrograms, studying sociological, economic, ethnomusicological, qualitative and quantitative relations, statistical, topos theory (Mazzola), etc. As a dancer, one can prepare a choreographic movement that follows or responds to the movement of sounds according to specific techniques, styles and currents codified for dance as a field of art, but one can also make a motion interpretation of a piece using the Émile Jaques-Dalcrose method. [318]

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[317] *Cf.* M. Gołąb, *Spór o granice poznania dzieła muzycznego*, Toruń 2012.

[318] To be at least partially honest with Dalcrose's thought, which, though highly important, has not been developed in this work, it behooves me to mention it succinctly. Dalcrose's intuition towards the gestures contained in the dissertation was not to internalize motion into the piece of music, but to externalize the piece by showing it in the language of the body. For this purpose, a whole method based on rhythmic exercises, improvisation (including movement) and ear training (e.g. the memetic phonogestures method referring to Guydon's hand) was created. All three elements, as in the ancient triune *Choreía*, are developed independently, but they take each other into account, so they can, according to Dalcrose, lead to the production of a pure image of internal hearing of sounds. The basic method of externalization of music is the movement interpretation of a musical work, oriented around the visual arts of *plastique Animée* and its expression, and the search for movement that is both instinctive and aesthetic. Dalcrose proposes a system of 20 basic gestures for interpretation, although contemporary eurhythmics artists expand this palette according to their needs, maintaining respect for the perceptual reception of the piece and the compositional intentions revealed in the score. The Dalcrose method, which varies greatly in practical applications within different local centers, is often developed and enriched with other, related trends. It is popular, for example, that eurythmics artists use the technique of gestosounds ("gestodźwięki", resulting from the heritage and thought of Carl Orff): the production of sounds by body movements, excluding the voice. Gestosounds may be the idea that meets with a perceptible need to produce so-called "virtual" scales (setting effects according to relations *quasi*e-pitched objectophones (Ondřej Adámek) or the currently popular *body-percussion* (François Sarhan). It is impossible not to mention the dictionary organization of communicative gestures for the needs of improvisation in *Sound-Painting*.

3.1.3. Meaning and Action – as subjective elements

Mental activation of experience may refer to one's own experiences in the mind of the recipient (e.g. life, situational, sensory, etc.), but also to symbolic experiences (knowledge, signaling semantic meanings). This is basically a blurring action, because it is about the subjective perception of sound matter in the work – both on the factual and abstract level.

Hence, it is necessary to distinguish an area of meaning which, although objectified (e.g. by cultural rules), remains individual through the mental activation of one's own experience, both practical (performing psychophysical activities) and abstract (semiotic, resulting from participation in culture, performing conventional activities). Therefore, in the study of this area, of course, all objectified semiotic theories come to the rescue, but all subjective descriptions of perceiving connections with one's own experiences will be equally legitimate.

The second derived category is action, focused around the internal categories of movement, a qualitative description of the goal and "intention of movement" through its trajectories, gravity, ephemeral sensations, the search for those elements that are perceived as fully subjective from the perspective of perception, e.g. the nature of movement, capturing gravity and tensions. In order to help interpret one's own reflexes, some categorizations have come to pass, such as *Roy's GTTM*, spectromorphology (with an objectified element in the form of spectrogram study), or psychoacoustics (e.g. auditory scene analysis derived from *Gestalt* psychology), but embedded all the time in individual "listening grammars" in cognitive experiences.

This creates an amazing field for the researcher of gestures, showing his interpretative artistry, erudition, but above all his own sensitivity, not only in the efficient movement in the world of symbols, established by various conventions, dictionaries and enculturations, but also, and perhaps above all, personal life experiences (practical), psychophysical and sensual, naming them, and searching for dependencies between the resonating body (even virtual) and a musical work. In this sense, research work will resemble (auto)psychoanalysis.

On the example of the friction of a match, one can trace the layers of analogy through gestures in "revealing" the potential meaning, reflected in the intensity and intention of musical actions. However, one can distinguish here the functional meaning expressed in

the desire (need) to turn on the light (along with the accompanying symbolism of, for example, the relation between light and dark, Sisyphean trials, or attempts crowned with the cutting of the Gordian knot). At the same time, the gesture itself also has its directionally shaped energy (purposefulness, expression, emotionality, on the basis of which in reality it can be determined whether the nudge does it with irritation or calmly, whether he has a steady hand, whether he does it with shaking hands, whether the repetition of actions is deliberate and aims to achieve the result, whether there is an obstacle – worn sulfur, etc.). These intentions are reflected in the shaping of sound processes – in my best understanding they are not identical with them – a certain energy quality, suggestiveness, effectiveness is "transferred".

Graph 31. The gesture-reference (Bortnowski) of "friction" and gesture of the "friction effect" (silence). *visibilium et invisibilium*, mm. 94-99.

The vector, the intention of the gesture presented above is to renew, but more and more "weaker", slower, as if with discouragement and finally the lack of crystallization of the effect.

Graph 32. "Friction" gestures in *ritardando* figures and "friction" gesture-reference (Bortnowski). *visibilium et invisibilium*, mm. 132-133.

The gestures of "friction" (renewal) in *ritardando* figures (in cl, sx, cr, tn; slowing down, *morendo*) are juxtaposed simultaneously with the gesture opposed to it (rising, building, suggesting, "promising" the possibility of crystallization of the goal and its fulfillment.

Graph 33. A gesture of "friction effect" (harmonic series). *visibilium et invisibilium*, mm. 136-139.

The appearance as a "friction effect" of a full harmonic series is, in my opinion, the fulfillment of a promise, a full crystallization of the goal (so what temporary). The accompanying illumination (sudden lighting of the light) and the beating of bell-like instruments strengthen the sense of sacredness, the metaphysical importance of the moment.

In a sense, these gestures can be reduced to the original forms as a gesture of absence-promise (friction) and presence-fulfillment of promise (appearance of the spectrum) or absence-fail in fulfillment of the promise (silence).

As I mentioned, iconicity (metaphorical iconicity) does not consist in precise mapping of friction parameters (although e.g. the proportions of duration, articulation, dynamic intensity are preserved) as a prerequisite, it is primarily about the preservation of *Stimmigkeit*, energy compatibility, vectors on the basis of which the recipient will independently interpret. [319] In this way, I create "metaphysical" "matches" that are "rubbed" in the process of the piece. However, I do not mean imitating or symbolizing actual friction (although it is suggested in later parts – e.g. by juxtaposing visual friction gestures in video playback with the appearance of harmonic series in Part III), but creating contextual weaves that support iconic and metaphorical analogies. Only and until analogies.[320]

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[319] In this sense, speaking in the context of my own work about the gestures of friction a match, gestures of fulfillment or not of a promise, I feel like Lutosławski explaining to Mstislav Roztropowicz the dramaturgy of his *Concerto for cello and orchestra* (though of course *gravitas* of My work and his work are completely different, I do not compare myself to either genius or his masterpiece, but I would like to draw attention to a certain situational parallel). In order to explain the nuances, shades of my concept, which can be interpreted freely (and I encourage it), I myself use external-systemic metaphors that direct the interpretation. In this sense, the doubly intentional metaphor of musical descriptions is at the same time both flexible and deadly in relation to the compositional intentions.

[320] The same can be interpreted *Symphony no 3* by Paweł Mykietyn, although the general association with hip-hop music is quite obvious (e.g. analogies to the "looped" ostinatomy style, rap style, to *scratching* technique), but not everyone will guess (hear and associate) that the opening gestures in the I part are derived as a melodic-harmonic-rhythmic transcription of a simple rhythmic-timbre scheme *groove of* percussion (as declared by the author). This does not prevent the perceptual perception of these shapes as homogeneous gestures. Such a shaping of gestures as analogies does not prejudge, but the qualitative contexts of juxtapositions and the ability to compare (search for repetitions and differences) gestures in the process of the work already weigh on reading the idea of larger wholes, and not reading each note separately as meaningful.

3.1.4. 'Synthecity' of the gesture

"Partition" into its first parts, reaching (mental reconstruction) to the most original structural elements can objectively determine what constitutes a musical gesture, revealing the operations and intentions of the creator. However, as I have repeatedly recalled, compositional grammar is only the reverse of listening grammar (as well as notation, performance, analysis and interpretation, etc.), hence the need to capture **the perception of** perceptually readable parameters as a whole conglomerate, also giving it meaning as Godøy's meaning or action.

In this dissertation, I repeatedly use the descriptive characteristics of the "synthetic value" of gestures, structures, sound objects. I understand this synthecity in Cassirer's way as embracing the diversity of juxtaposed representations with one cognition. Therefore, it is impossible to understand the mechanisms governing this synthesis without penetrating at least to a small extent into certain cognitive processes. [321] Due to the fact that the experiences of short-term memory (storing the image of the piece being listened to at that moment) are linked to the experiences of long-term memory (storing the recipient's experiences, beliefs, knowledge), I will present these experiences in the context of the theory of the audiovisual contract, which deals with the issues of both types of memory intensively.

Audio-vision as a concept (or in fact two opposing concepts that are eventually synthesized into one) developed Chion in the context of cinema research. The first element studied is the multimedia context, in which synchronous sensory data (audio and visual transmitted through information transmission channels: auditory and visual) add up (synchresis). The context of multimedia beams is accompanied or may be accompanied by phenomena:

(1) **audiovisual contract**: the ever-present situation in which the bundles of media "illuminate" each other and create a relation with each other (meaning [content], contrast [counterpoint], compatibility [affirmation of idem *per idem*], discrepancies [independent complementarity]). [322] One can distinguish audio-vision, but also video-audition, due to the primacy of the role of a given layer (as a space of

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[321] P. Parszutowicz, *Fenomenologia form symbolicznych. Podstawowe pojęcia i inspiracje „późnej" filozofii Ernsta Cassirera*, Warszawa 2013, p. 113.
[322] This is a special kind of interaction of multi-level perceptual processes.

attention). [323] A finite number of transmitted beams of media information (in this case two) can, however, have an infinite number of levels of binding in perception;

(2) **added value:** almost always at the interface of media bundles, new value is created, [324] absent in any of the layers (Zielińska will say: credibility, sympathy, the power of persuasion; [325] Chion is: sensory, informational, semantic, narrative, structural, expressive, informational value[326]). [327] It makes the viewer convinced of the "natural", "material" presence of this value in the work (e.g. in the vision itself), despite the fact that it is the result of the cooperation of many layers and psychophysical reactions of the recipient himself. We can talk about intermediality when value is formed, and about ordinary multimedia, when the media bundles do not find a perceptual "conclusion". The added value, therefore, will not only be a psychophysical reaction (let it be called an "emotion"), but it will also be information that says something more about reality described by various media beams (resulting from experiences contained in long-term memory).

The ideological continuation of the dualistic audio-vision relation is the Chion triad audio-logo-vision[328], in which the word (*lógos*) is introduced as a separate media bundle, complementing the contexts of visual and audio frames, in its various forms and manifestations. The relations between the layers are slightly different than in the audio-vision itself (embossing, counterpoint, contrast, contradiction, emptiness). [329] I think that systems generated in relation to other senses: taste, smell, touch, etc. would also require distinction.

An audiovisual contract is difficult to explain without noticing three more processes taking place in the mind of the recipient:

(1) **Mental Relocation (*cf.* Smalley's source binding – chapter 2.6):** a change in context, resulting from a change in the sound source, emitter – causes mental ignoring of the emitter in the form of a speaker, and "reproduction" of the primary source. Any technical error destroys perceptual processes as a disturbance of the comfort and quality of data transfer (e.g. "processing" of samples inconsistent with the rules, or "jams" in the continuity of spatial movement). Zielińska notes the

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[323] Media layers as spaces of attention lost due to the obvious neurobiological conditions of each of the senses – the speed of data transfer. Zielińska notes that the eye perceives space earlier than the ear, while the ear notices temporal changes earlier than the eye. L. Zielińska, *Kontrakt audiowizualny*, [in:] T. Brodniewicz, H. Kostrzewska (eds.), *De musica commentarii*, vol. 2, 2010, p. 234.
[324] The added value does not come from one particular layer.
[325] L. Zielińska, *Kontrakt audiowizualny*, *Op. Cit.*, p. 231.
[326] M. Chion, *Audio-wizja*, *Op. Cit.*, p. 10 and d.
[327] The exceptions are situations when a rich multimedia context generates a huge sum of sensory data (including superfluous ones), there is not enough time for data resynthesis – isolating relevant data and synthesizing them into added value (higher-order conclusion), and sufficient comfort of the recipient is not ensured.
[328] This triad corresponds to the Lehmannian triad of relational music. H. Lehmann, *Rewolucja cyfrowa…*, *Op. Cit.*
[329] M. Chion, *Audio-wizja*, *Op. Cit.*, p. ?.

"extraordinary fruitfulness" of shaping the ambiguity of sound, enabling the manipulation of the recipient's perception and leading to the creation of calculated potential relocation mistakes;[330]

(2) **mental rendering:** integration of multimedia information in the recipient's memory, enabling "emotional polyphony" – Zielińska gives here an example of rendering between: (1) sound representing "abstract emotions" and (2) an image representing the object at which the emotions are to be directed, into a homogeneous, synthetic unit, a matrix in the perception of the recipient. In this sense, you can subconsciously mentally "see" something you have heard and "hear" something you have seen, and at the same time (thanks to the added value) have your feelings of, for example, sympathy or antipathy directed to a specific object due to specific contextual relations;[331]

(3) **Establishing relation**: through a mental, though unconscious, test of similarities (establishing the coherence of the message) and differences (establishing the hierarchy of layers in the case of contradictions, or constituting the added value in the case of compliance). According to Zielińska, performing a test in the perception of the recipient may manifest itself in a sense of tension and relaxation, promise and fulfillment, satisfaction with the fulfillment of predictions or pleasure coming from surprise. [332] In the absence of any of the media bundles, this test also occurs, but it is not confronted with short-term memory (perceived work), but long-term memory (recalling and imagining images based on experience).

I think that in gesture there are processes known from the audiovisual contract, especially when it comes to a son-performative gesture, but also a sonistic-semiotic gesture, etc. However, it is impossible not to notice that in the case of purely sound gestures this phenomenon will also occur, because the visually absent image will be replaced by images stored in long-term memory. In this sense, the musical gesture is synthetic, due to the single knowledge of Godøy's values of motion-meaning-action.

In the worst case, in which this claim could not be fully maintained, I can say with certainty that an audiovisual contract phenomenon similar will occur – on the basis of mental rendering and a test of relations, the sound beams will be tied together. In this sense, musical gestures would be synthetic due to the single cognition of the various component morphologies as unified due to the Chionian concept of the "sound myth", the need to search for a higher order meaning. Chion, as a researcher of both the relation between sound and

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[330] L. Zielińska, *Kontrakt audiowizualny*, *Op. Cit.*, p. 235.

[331] *Ibid.*

[332] Hence, in my opinion, there is a logical need for certain archetypal perceptual reflexes and "images" that will project onto my concept of archetypal reductive forms of gesture.

image in cinema, but also Schaeffer's concepts, certainly used not only the theory of listening, but also the theory of the sound object, i.e. individuals with just such perceptually homogeneous, synthetic, hierarchical provenance. In my understanding, the gesture is as synthetic as *Klangfarbenmelodies*, Weberian punctualist trajectories, *chronochromie*, Grisey's instrumental synthesis, or Lachenman's morphologies (types) of sound.

In *visibilium et invisibilium* I use some perceptual reflexes associated with audiovision, not to mention three examples.

(1) Complementarity strategy (Part I): juxtaposing sound gestures-aggregates and their reverbs with the image of the whip (frusta) being struck, directs attention, as it were, "sharpens" it to the reading of gestures-aggregates, as parallels of the physical "impact", and resonance as a form of afterimage (air escaping from the instrument in tracer imaging). At the same time, the gesture-aggregate will be transformed into frictional gestures, so there is a contextual relocation of similar material shapes (the equivalent of a grinding dog, although at a much less manifestative, obvious level). At the same time, within the light layer, its intensity (brightness) remains at a low level, which complements the feeling of failure to fulfill subsequent attempts to "crystallize" the aforementioned friction, only when the full spectrum and bell-like instruments appear, full illumination occurs.

(2) Counterpoint strategy (Part VI): the *morendo* gestures in the audio layer are contrasted in the visual layer with an optimistic, powerful gesture of the "catching" hand, actually ending the work and, in my opinion, introducing an element of "optimism" as a parallel to the sound "Picardy" ending, even in spite of the constantly dimmed light.

(3) Confirmation strategy (Part V): the visual slowing "spinning" of aliquot pipes in the air by a group of amateurs is confirmed with the deceleration in the orchestra at the climax and juxtaposed with a dimming light.

Therefore, I use all three types of strategies for shaping relations between the media: confirmation, complementarity and counterpoint, which, through visual impressions (video, light) contextually, sparingly give the audio impressions (as the primary in a sound performance) certain qualities absent in them. Thanks to this, this "emotional polyphony" associated with mental rendering is possible.

I saw the possibility for the phenomenon of mental relocation to be created in Part I, where, for example, visual whip (frusta) strokes are accompanied by samples of lighting a match, or in Part III, where visual striking is assigned various types of sound actions, including, for example, spectrum precipitation.

Compositional grammars and listening grammars focused around the sense of form are shaped by the test of establishing relations (repetitions and differences) not only by distinguishing what is a figure and what is a background (and calculated ambiguities), but also by determining the markers of the stages of dramaturgy.

3.1.5. Understanding gesture as a result of the motion-meaning-action relations

Ordering the arrangements of relations of the triad layers of gesture remaining in the continuous context of space (dimensions) and taking into account the possibility of different levels of complexion, as well as on the basis of intuitions, hypotheses and epistemiological theories outlined in the previous genre, I generally see 4 basic possibilities of understanding the musical gesture, which can be treated together (or separately), also within one order in a musical work:

(1) **pragmatic (formalist, materialist):**
   a. gesture as a structure of sound motion,
   b. taking into account the conviction of analogy, in a concrete sense – as the only form of drawing a parallel between non-musical and musical,
   c. motion and action as dominant layers, in principle meaning in the narrow sense,
   d. limitation to forms of communication meaning within the system[333] – all transformations of gestures take place within the system of signs, in this case sound, e.g. variation, but also a stage marker resulting from the grammar of the form, or assigning a "thematic" rank to the gesture,
   e. operating space both in the audio and physical understanding,
   f. external system communication is generally limited to a minimum (as a necessary space for the use of doubly intentional musical metaphors; or

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[333] I read the meaning in this sense in the direction of Meyer's intuition (otherwise criticized – hence I do not believe in a Szwajgierian "perfect listener (?)", or I do not think that due to naturalization and enculturation processes the information content can be stable in any way) that the information content of music should be read in the context of information theory – **as a stylistic (idiomatic), syntactic shape remaining in reference to perception**. The phenomenon in which there is an inversely proportional process between the scope of information content and predictability (meeting expectations) is irrelevant to the fact that the meaning understood in this way is constituted: a high probability of succession means entropy (low information content) and a low probability of succession means high information content. The level of information content according to Meyer has **produce an emotive response, such as a sense of pleasure or fulfillment** (Bruner would probably call it an effective surprise.) *Cf.* L. B. Meyer, *Emocja…, Op. Cit.*, P. Podlipniak, *Naturalistyczna muzykologia systematyczna wobec poglądów Meyera na emocje i znaczenie w muzyce*, [in:] *Res Facta Nova. Teksty o muzyce współczesnej*, 21 (30), 2020.

acceptance of the existence of indelible associations of embodied cognition; avoidance of associations with non-systemic meaning),

g. In this sense, this understanding of the gesture is presemiotically oriented, only as a logical complement, necessarily also semiotically;

(2) **idealistically:**

a. gesture as a structure of sound motion,

b. taking into account the belief in the possibility of non-musical representation in musical (not only as an analogy),

c. movement, action and meaning treated equally,

d. communication carried out on many levels within and outside the system (all transformations of gestures are made within various semiotic systems, e.g. non-musical translated into musical ones), including in particular the use of *lógos*, manipulations at various cultural levels – emblematic, symbolic, semiotic,

e. broad understanding of space – both audio or physical, as well as in other dimensions (also somatic or thought)

f. In this sense, the use of *Lógos* is aimed at using or expanding embodied cognition (e.g. the strategy of semantizing relational music). A gesture can be as well a figure of speech, a symbol, or a sensually readable shape of the trajectory of a process;

(3) **performatively:**

a. gesture as a structure of non-sonic motion (e.g. physical, but also visual),

b. motion, action and meaning treated equally,

c. gesture, motion implemented within the work (as "choreography"), or using the performative and visual values that the act of performing music contains (using the strategy of visualization and theatricalization of relational music),

d. communication functions can be perceived in various ways – from movement transformed into data bundles in the *HCI* sonification system, significant content (also of a purely executive, instructional nature – executive communication for synchronization), to symbolic and cultural communication,

e. exposed spatial value of the musical work and motion (possible to embed directly in physical space without resorting to doubly intentional metaphor or using contextual ambivalences of both understandings of space),

f. gestures supporting and accompanying sounds, but also sounds supporting and accompanying performative movement;

(4) **abstractly:**

   a. gesture as a (psychophysical) structure of motion, as a self-expression of the creator or performer (if he has been granted independence in this aspect),

   b. this structure is expressed through higher levels of assemblies in the work,

   c. motion and space understood metaphorically: action and meaning as primary layers, while movement is placed in symbolic space (the space of the course of thought),

   d. self-expression can be directed internally (introversion) or externally (extroversion) towards the (psychophysical) structure of the recipient,

   e. It is used to express internal states, but also knowledge or beliefs (e.g. support or disagreement with political reality) or to perform actions through a work (e.g. breaking with the tonal system).

Due to the interpenetration of understandings in one order and the resulting differences between the approach of the composer, the performer and the audience, it seems almost impossible to unambiguously attribute to a specific paradigm. It is certainly easier to apply to describe specific aspects, layers in the work, or to describe the beliefs of composers (and to juxtapose these beliefs with reality, knowable in the work; it can be fruitful in verifying what could have been the intention revealed in the compositional *epistēmē* and *doxa*, and what belongs to the *recipient's gnōsis*).

My acceptance of all four understandings of gesture as legitimate results from the need to logically organize hermeneutics and to observe *prâxis* (including my own – in this way the feedback loop of theoretical and creative work is realized, where both the score influences theories and theories influence the score).

Consequently, in *visibilium et invisibilium I* attempt to integrate all four aspects. Thus, there are also pragmatic gestures, clearly within the system, internal character in the work – stage markers (striving for climax, culmination, resolution of the climax), gestures and process-gestures, the general shape of movement (even if it brings to mind physical movement), including spatial relations. If I foresee the possibility of creating a symbolic reflection on their basis, it is only as a result of combining them with other gestures into gestures of a higher order. This does not mean that the gestures of the lower do not fulfill the communicative value – only that their "content" is not the target transmitter of symbolic meanings, but rather an invitation to refer to sensory and life experiences, an orientation indicator, about the quality and stage of the process, its direction, "intentions", "expressions". In relation to the different layers in the piece, they usually remain in complementary relations.

There are also gestures that have (intended) imprinted images, meanings, symbols and references: gestures-references (quotations), gestures iconically and metaphorically (analogously), e.g. reproducing the friction of a match – its phases, effects, imagined sensory experiences. I try to distinguish this type of gestures, they usually function as a figure (gestural type) against the background (textural type), so that they are clearly visible in complex layers of drama. Although they are introduced with the hope of reading them, I do not expect it – rather to induce the formation of a general sense of common provenance – and in comparison with the image – to enable identification – and for attentive participants of culture – to open the perspective to other artefacts of culture – *lógos*, musical oeuvres, sacred books. They remain with other layers in the work, usually in a relation of counterpoint, complement or compatibility.

I also use broadly understood performative gestures – movement choreography of orchestral musicians and the use of visual aspects of conventional instrument playing (*morendo* motion when performing *ritardando* figures, arpeggized broken chords in the violin), and completely unconventional (circles with aliquot pipes, *pan-flute* technique [*air-guiro*], striking the mouthpieces of instruments). The movement choreography of the musicians used in the II movement is deliberately contrasted with the introduction of the presence of dancers, it is based on concise movements – a sweeping hit on the mouthpieces (the body of the instrument) and various configurations of hands "floating in the air" or turned faces. The movement choreography of the dancers as a layer remains in a counterpoint relation and much less complemented with the other layers. The presence of dancers and a very general outline of the ideological proposal of their movement is aimed at creating a choreography that is absolutely in counterpoint to the sound part (by definition, because I do not determine it myself and entrust it to the will and imagination of artists-dancers) [334], although synchronized at nodal points (gestures-strikes).

If I were to indicate an abstract gesture, it would be to invite the viewer to poetically understood "levitation" – contemplation of the metaphysical wall between the visible and the invisible broken before their eyes (and ears), which is itself the subject of this work, the highest gesture in the hierarchy, to which all the processes taking place in the work are subordinated, so they remain in a relation of agreement. I do not present and do not expect a coherent symbolic interpretation, but rather I hope to arouse the mood for reflection in the listener. The complexity of the layers, the juxtaposed contexts means that each recipient can make an

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[334] Close to my line of thought are the two quotes cited by Cook in the article *Między procesem a produktem: muzyka jako performans*. transl. J. Dolińska: "Performance is not to present a piece of music, but rather a piece exists so that the performers have something to perform" (quoted after: R. L. Martin, *Musical Works in the Worlds of Performers and Listeners*, [in:] Michael Krausz (ed.), *The Interpretation of Music: Philosophical Essays*, Oxford 1993, p. 123). "A standard among forms of listening (...), which will no longer be perceived as a reproduction, as a reproduction of the image (with all the usual implications of losing the truth and distorting reality), but as a more direct, immediate contact with a given event" (quoted after M. Chion, *Audio-wizja*, *Op. Cit.*, p. 103). *Glissando. Magazyn o muzyce współczesnej, Performatywność*, nr 1 (21), 2013. [translation after Dolińska done by myself].

interpretation in his own way. I have only defined the framework (ideological parts, and the choice of gestures, illusions, creation of "experiences") in which everyone can find a "foothold".

Due to the fact that the idea of a sound spectacle has been adopted for the work, which in my opinion is a form of spectacle in which sound plays the main role, for this reason the non-sound layers are less independent than the audio layer. Although I use some audiovisual experiences, which I learn from examples from the cinema, from the Internet, from social media (Facebook, Instagram, Tik-Tok), they are still focused on emphasizing and giving contexts to the sound layer. Hence, I use them quite sparingly, not to say in a simplified way.

3.1.6. *Prâxis* of understanding and defining gestures – selected examples

Both the layered structure of the gesture and the attitudes adopted towards their relations correspond to fragments of various definitional understandings of the gesture, derived for example from the Dictionary of the Polish Language:

(1) "hand **movement** accompanying speech, emphasizing the **content** of what is being said, or **replacing** speech;

(2) **a** generous act, done in a solemn way or **for effect**;

(3) **Stage expression: a meaningful movement of the body accompanying the speaking of a character or replacing a word**'.[335]

It can be noted that the concepts of movement, accompaniment or emphasizing content, substitution of speech, the way of performing an act, achieving its effect, means of expression, meaning, substitution of words – all these elements can be found in the construction of a musical gesture and its understanding in the interpetation-exponential process (they can be extended, reduced).

For this reason, in comparison with the "generation" of communities of understanding gesture, observed in the history of music, definitions such as the following by Michał Bristiger -

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[335] Entry: *gest*, [in:] *Słownik języka polskiego PWN*, [source:] https://sjp.pwn.pl/sjp/gest;2461455.html?utm_source=TradeTracker&utm_medium=display [Accessed: 01.05.2023]. [translation after Słownik języka polskiego done by myself].

"'Musical gestures' is a term formerly unknown in music, but recently increasingly used [...] The use of the term 'sound gesture' in music theory is probably connected with the decay of the traditional sound system of European music, when musical works lose their traditional construction and their 'structure' can no longer be defined by existing categories." [336]

- using, after all, true statements, seem at least unfounded, not to say erroneous. [337] The musical gesture establishes the reality depicted in the piece of music much further than the notions of motive, phrase, sentence, figure and background, rhetorical figure did (and do). No old or new structural or rhetorical concept seems to be able to encompass the essence of the musical gesture.

I found a similar situation of unfortunate operations with terms in defining gestures contained in the Encyclopedia of Polish Contemporary Composers:

"The term [gesture] is related to the way of composing used by Tadeusz Wielecki, as well as Wojciech Ziemowit Zych. It consists in using individual musical **actions formed** into various but characteristic shapes and treating them as **carriers of energy and meaning** in the composition. The musical gesture is therefore a kind of musical **narrative unit**. It can take the shape of a chord or motif, but also appear in the form of more complex **sound and movement** structures." [338]

A definition like the one presented above does not contain false claims. But it also does not contain statements based on "full truth", concepts must be interpreted by this definition, rather than presented directly. The main complaint is obviously treating the gesture only as a technique, which causes a number of consequences – ignoring the achievements and intuition of other composers, ignoring DNA, the essence of the concept, its properties and practical effects.

I find it more interesting a defininition created by Andrzej Mądro (although ideologically related to Tadeusz Wielecki, about whom in a moment):

"The technique consists in compiling and confronting various meanings and moods, creating music that plays with diverse energy. In gestures, there are **synergy** of

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[336] M. Bristiger, *Związki muzyki ze słowem,* Warszawa, 1986, pp. 137 and 138-139. [translation after Bristiger done by myself].

[337] The term "gesture", as pointed out by K. Lis, can be found, for example, in the treatises of Girolamo Frescobaldi, who compares keyboard playing (performance practice) with the contemporary style of madrigal, including Carlo Gesualdo da Vanoza (compositional practice). Therefore, in terms of scope, this concept does not apply only to pedagogy or technique of performance, but also to the description of certain properties present in the work. We can therefore speak of this community of meanings already in the context of the early *toccatas*, *canzonas*, *Ricercars*, and even *Sonatas* whether *concerti*. Similarly, a much broader meaning of "gesture" is formed in the context *Prélude non mesuré* Luis Couperin or the works of Johann Jakob Froberger, where harmonic, melodic and phrasing processes are ordered in the shape of organic impulses, movements, sensory properties as very characteristic "flows" ("pendulums"), with purposeful characteristics.

[338] [entry] *gest muzyczny* [in:] *Encyklopedia Polskich Kompozytorów Współczesnych*, [source:] https://mapofcomposers.pl/terminy/style-techniki/gest-muzyczny/ [Accessed: 01.05.2023]. [translation after Encyklopedia done by myself].

musical **shape** and **force** that are **understood intuitively**. And, in fact, they are **quite objective in giving rise to an emotion, subjective only to the attitude of the audience**. The gesture **movement**, generally speaking, is predominantly **about symbolic and aesthetic properties**. This movement has no purpose; it does not lead to anything. Gesture is movement 'in itself', like dance. That is why Giorgio Agamben calls the gesture 'the pure mean', which is one that does not aim at anything. At the same time, it can be **a carrier of meaning**, opening the sphere of *ethos*. Of course, the term 'gesture' has been used in music theory for a long time as a comfortable **metaphor**. In the broad common sense, a 'musical gesture' usually refers to the **result of the action or attitude of the artist or performer**, but it can be considered as an **expressive sound structure with specific characteristics of movement, shape, and timbre. The musical gesture is a message without words, a message that cannot be expressed in any other way."**[339]

As above, the understanding expressed in this work stands in opposition to the definition of Wisely, which gives *a priori* priority to structure (although it can be understood idealistically), reduced to compositional technique (not to mention the attribution to the gesture of the value of "pure", "empty" intentionality). I give priority to the diversity of artists' attitudes (especially today), hence the deliberate balancing of types of gesture understandings, applicable to music in the traditional sense (operating primarily with sounds), but also relational (with its strategies of semantization, performatization, visualization), conceptual, conceptual, installation, etc.

The opposite definition, idealistic, although not devoid of practical values, is presented by Ludwik Bielawski. Gesture is understood as a conscious, controlled, elementary **motion** of the body, the only direct means of **manifestation of** human. The meaning of a musical gesture lies in the gesture of movement. Therefore, from Bielawski's point of view, the transformation process of gesture is important – considering it in a **performative** context, as a purely executive gesture, which is a **transformer** of a non-musical gesture into a musical gesture. [340] At the same time, the gesture has its own **meaning, logic, psychological or semantic content**. They appear here as functional elements of the system, and complex purely physiological processes (physical aspects of impact on the environment). Due to the unifying concept of space, Bielawski's gesture can be measured, described in the language of physics, mechanics of movement, recorded with apparatus.

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[339] A. Mądro, *From Extraversion of Collage to Introversion of Composed Trill – Techniques of Self-Expression in Tadeusz Wielecki's Music*, [in:] J. Posłuszna (ed.), *Psycholgy of Art and Creativity*, vol. 3, Kraków, 2017, pp. 93-95.
[340] L. Bielawski, *Czas w muzyce i kulturze*, Warszawa 2015, p. 175.

Another definition of gesture – although enumerative and implicit – is given by Grisey, one of the first contemporary composers known to me to use the word gesture in the context of his own work, and in a sense similar to the present one. Although in his text he does not call what he creates a direct gesture, he lists the components of his technical workshop that indicate gestural sensitivity:[341]

"Harmonic and timbral consequences:

- More "ecological" approach to timbres, noises and intervals,
- **Integration** of harmony and timbre **within a single entity,**
- **Integration of all sounds** (from white noise to sinusoidal sounds),
- Creation of a new harmonic functions which include **the notions of complementarity (acoustic, not chromatic) and the hierarchies of complexity,**
- Re-establishment, within a broader context, of the ideas of consonance and dissonance as well as modulations,
- Breaking out from the tempered system,
- Establishing new scales and – over time – a melodic re-invention.

Temporal consequences:

- More attentive attitude towards to the **phenomenology of perception**,
- Integration of time as the very object of form,
- Exploration of "stretched" time and "contracted" time, separate from that of the rhythms of language,
- Renovation – over time – of supple metric and **exploration of the tresholds between** rhythms and durations,
- Possible dialectics between musical evolving in radically different times.

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[341] Grisey directly calls the gesture elsewhere – from program notes, legends to scores, an image of gestures emerges as comparisons to biological functions (gestures of the respiratory cycle in *Partiels*, heartbeat gestures in *Prologue*), but also more complex virtual activities, which Grisey tried to reproduce into sound along their physicality (a dramatic gesture of unveiling the curtain translated from a fresco by Piero della Francesca *Madonna Prado* in *L'Icône paradoxale (Hommage à Piero della Francesca)*); Elsewhere he speaks of spatial action, the embedding of sounds in the abyss (*mise en abyme*). Grisey's gestural problem may be blurred by the fact that he used phrases interchangeably to describe the structures he produced *Gestalt* ("shape"), as well as, precisely, "gesture". At the same time, the composer himself does not seem to be sure to what extent "process" and "gesture" can be opposed. "Starting with the composition *Epilogue* and *Talea*, I am very intrigued by the problem of acceleration. Is it possible to speed up the process without returning to gesture music? Collon Nancarrow in his *Etudes* Na pianola tried it successfully, proving that it is possible to accelerate to the speed of human perception. However, is this possible without the use of mechanical or electroacoustic means? *Le temps et l'ecume* It oscillates between the music of whales, people and insects. The same gesture (rhythm-noise/held sound-spectrum) passes through a sieve of relative measures of times so far apart that a one-second cell can become the basis of a formal process involving the total duration of a piece. All combinations between these measures of time are possible, but doubts remain as to the possibility of perceiving them", G. Grisey, *Le temps et l'ecume*, [in:] *Książka programowa 43. Międzynarodowego Festiwalu Muzyki Współczesnej Warszawskiej Jesień,* transl. anonymus, Warszawa, 1999 [w:] J. Topolski, *Muzyka Gérarda Griseya*, Wydawnictwo Krytyki Politycznej, 2012, p. 269. *NB* I try to answer the rhetorical question asked by Grisey in the hypothesis of the zonal construction of the gesture. [translation after Topolski done by myself].

Formal consequences:

– More **"organic" approach to form by self-generation of sounds,**
– **Exploration of all forms of fusion and tresholds between different parameters,**
– **Potential for interplay between fusion and continuity, on one side, and diffraction and discontinuity, on the other,**
– **Invention of processes, as opposed to traditional development,**
– **Use of supple, neutral sonic archetypes which facilitate the perception and memorization of processes,**
– **Superposing and placing in and out of phase contradictory, partial, or implied processes,**
– **Superoposition and juxtaposing of forms** flowing within radicaly different time-frames".[342]

In view of the selected definitions quoted, I believe that the hermeneutical process of gesture is necessary for the popularization, in my opinion, of a broader and more universal understanding of gesture, although I do not deny the right to construct one's own definitions. I believe that the broad approach of understanding adopted in this dissertation allows for the adoption of various types of movement, their modeling (through music or not), taking into account embodied cognition, mental and sensory processes, oscillations of scale between physicality and abstractness of movement, its founding in symbolic systems, or striving for presemioticism, communication expressed in the ways of encoding and decoding the content "content" of the gesture (whether through mathematical processes, technological, analytical, cognitive, or symbolic processes).

The definitions of gestures presented so far range from the use of gesture as more or less equivalent to body movement, to the use of gesture in a metaphorical sense to describe certain emerging features of musical sound.

In order to emphasize the topicality of the understanding expressed in this work, I chose the position of Tadeusz Wielecki, perceived quite commonly as the Polish "godfather" of the musical gesture, although I personally think that Wielecki simply calls what many artists have been doing so far "in silence". However, I do not deprive it of his significance, as well as the individualism of the approach, especially his own unique compositional language and technique, but I cannot ignore the fact that the concept of gesture has basically been

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[342] G. Grisey, *You said spectral?,* transl. M. Mendyk, M. Mroziewicz, [in:] J. Topolski, *Op. Cit.*, pp. 398-399. [transaltion after J. Fineberg: G. Grisey, *Did You Say Spectral?*, transl. J. Fineberg [in:] *Contemporary Music Review*, vol. 19, part 3, 2000, p. 1-3.]

hatched processually for many centuries. Therefore, Wielecki's attitude is basically an attitude of synthesis.

He describes his technique and his language as here:

"[...] The essence [of the gesture] is the **dramaturgical indivisibility** of a motif, of a musical whole. It is, therefore, a kind of musical event which cannot be reduced to a more simple form without compromising its essential function, that is, that of the musical element of action. And then it is something that should have the character of **a sign**. It will not be a gesture simply a motif or some abstract sound cell. In fact, it is about transferring the principle of gesture as a body reflex to the area of musical discourse. A reflex containing a message, although without words. Man makes a gesture with which he communicates his own feeling of things, some inner truth of his own. But such a gesture has a musical value: it has its own **energy**, rhythm, tempo, a definite duration. Transferring these characteristics to sounds is doable. But in addition – and here we touch the essence of the matter – these elements are the carrier of **expression and meaning**. And since the essential requirement of a musical gesture is its distinctiveness, characteristic, I see in the method of composing using gestures the possibility of music that plays with words, with diverse energy. And also the possibility of obtaining greater musical plasticity of matter and – independently – giving sounds a humanistic sense to a greater extent than they have when they are treated as a pure construction. He also states: My goal is to **appeal to the deep, inner layers of the psyche**. During our communing with music, we are confronted with the unlimited world, with transcendency. Musical and artistic action **results from communication with another human, but before** God, the Absolute."[343]

Wielecki's attitude basically refers only to those categories that are described in this dissertation. The synthetic value of the structure, the problem of action (as trajectories, expressive shaping of energy), the problem of meaning (communicativeness, rules of meaning, operating symbols and meanings), the reference to embodied cognition based on images of cognitive experiences are captured. The uniqueness of Wielecki's attitude expressed in the technique and compositional language is based on a conscious play on categories of difference and meaning, [344] which Wielecki's gestures are dressed mainly in collage forms (not to say kaleidoscopic ones).

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[343] [entry] *Tadeusz Wielecki*, [in:] *Wirtualna Encyklopedia Muzyczna*, Polmic, [source:] https://www.polmic.pl/index.php?option=com_mwosoby&id=27&litera=26&view=czlowiek&Itemid=5&lang=pl [Accessed: 01.05.2023]. [translation after Encyklopedia done by myself].
[344] *Cf.* G. Deleuze, *Różnica i powtórzenie*, transl. B. Banasiak, K. Matuszewski, Warszawa, 1997.

3.2. Subject of the gesture

"The structure of music comes together with the structure of human. And then something seems familiar, something is symphatic, something is irritating, so it's a problem how you shall come to the terms with irritation: are you shut the jalousie and say "no", or are you open your ears. So I think music should just very kindly invite to open the ears and that's all." [345]

A reflection on the musical gesture as a peculiar metastructure is necessarily a reflection on its perception. From the very beginning, gesture was understood communicatively as the transfer of both ideas or abstract data from person to person, performed as if for the sake of the other person and the possibility of reading inherent in him, as Beethoven wrote on the cover of his *Missa solemnis* in D major, op. 123: "von Herzen – möge es zu Herzen gehen". Bielawski notes that everything that a person can consciously do (as an expression of human activity, although not necessarily intentional, or maintaining full control over it) is a movement of the body or a movement of thoughts, having its own human meaning, logic or psychological content. This movement, as the most primordial element of the sound structure (earlier than rhythm), places a man conscious of the act of action in several configurationsh:[346]

(1) **the subject of action** as a quasi-mind, the expression of the will expressively through gesture and the establishment of its "goals", intentions, ideas;

(2) **the dispatcher of the action** as the subject determining the "script", the "choreography" of the gesture in correlation to the objectives of the subject;

(3) **the performer of the action** as the executor of the "script", "choreography" of the gesture;

(4) **perceptor of action** as recipient and interpreter.

One person can combine all these roles, parts of them, or they can be distributed among different people. [347] It should be noted that the transfer of ideas between individual elements of the system of gesture subjects may be disturbed, whether by lack of

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[345] A. Nowak, [Interview with Helmut Lachenmann, Youtube, 21.11.2021] *Rozmowa z Helmutem Lachenmannem (Polskie napisy) / Conversation with Helmut Lachenmann*, [source:] https://youtu.be/9uVq15nEkpw?t=332 [Accessed: 01.05.2023].
[346] *Cf.* L. Bielawski, *Op. Cit.*, p. 175.
[347] Although it should be noted that anthropologically oriented communication is not the only possible one. Human-machine communication is also important, especially in gesture applications that require interaction *HCI*. Especially then the "content" of the gesture can be understood as a set of data, parameters, *output* communicatively understandable for the machine. Other formulations of this understanding are also possible, especially in the context of the dynamic development of symulated intelligence or posthumanist trends and philosophies.

competence (also pushed to the extreme limits, manifested in disability, e.g. deafness), inattention, lack of comfortable reception conditions (including those caused by the creator or performer of the message), error, unconscious or intentional falsification.

A peculiar perceptual game is revealed here, similar to a child's game of a deaf (broken) phone – at every stage of the message, the gesture loses information. [348] Hence the considerations concerning the levels of surrogacy of gesture (Smalley), or moving away from the original source in the concept of transformation as Perice's semiosis. They meet the basic laws of human perception. On the one hand, the constitution of a musical work in experience and cognition[349] causes great fragility and instability, which also leads to the negative consequences of the phenomenon of the "deaf telephone". On the other hand, due to the fact that we are all humans (in principle hearing humans), this appeal to embodied cognition is natural and achievable in principle without boundaries or barriers founded in the perceptor (about borders and barriers in other stages later in the text).

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[348] Milton Babbitt sensed this in his famous 1958 article. *Who Cares if You Listen?* The vision presented there, by no means accidental or temporary, but (as Babbitt himself stated) an irreversible configuration of a specialist composer anachronistic from the point of view of performers and recipients (due to the fact of producing a product of dubious market value, somehow undermining the previous technical approach of an educated musician [in terms of aesthetic and technical orientation inherent in the principle To this day in the same place for 70 years], producing an artifact that is difficult, incomprehensible, abstracting, isolating. On the other hand, Babbitt himself sees as a threat certain gestural qualities – the production of a complex, coherent structure, which is something more than a simple sum of its constituent elements. **The inability to precisely perceive and remember the value of any of these components causes the displacement (shift) of the action in the musical space of the oeuvre, a change in its attitude to other events in the work, and thus falsification of the overall structure of the work.** It is this high degree of "determination" that most strikingly distinguishes such music from, for example, a popular song. All "returns to the roots" – new melodies (e.g. in Lutosławski, Grisey, or, without going into details, in broadly understood post-modernism), organicity and naturalness of sound (Grisey, Sciarrino and others) are in a way, according to Babbitt, futile – because the "divergence of paths" has occurred, the perceptual-conceptual barrier has been constituted. This is strange, to say the least, for several reasons. After all, performers are educated "in a gestural way", as if to search for "bigger" wholes that they are able to link with their own experiences ("play it as if an elephant walks", "play it as if a king walked"). It is fixed as *Opus Moderandi* education of the youngest, as a tool of enculturation, also the Dalcroze method, which puts in the first place fidelity to the work and the search for movement communities, most often founded in primordial reflexes. Babbitt also notes a form of palingenesis of ideas – music is "new" in many ways, but it is often also a broad extension of the methods of other types of music, derived from a thoughtful and extensive knowledge of their dynamic rules (i.e. grammar). In this sense, the compositional grammar is one until the grammar of listening changes, because it requires not only knowledge, but also experience, "solidification". Lutosławski, writing about preparation (note of 20.12.1964), directly opposes the use of instruments contrary to their intended purpose – **as an ontologically degrading activity** – and just as bizarre in his opinion is the use of meaningless objects (in his opinion) – like a nail, a tram ticket – which makes them stay **elevated to the role element of a piece of art**. An important barrier is therefore also the ontic qualities and statuses of the activities performed in the work, including executive activities.*Cf.* cited example from Sachs). That is why broadly understood education and popularizing activities are so important – encouraging the observation of one's own sensory experiences is crucial, and if it is put in the foreground, and the issues of grammars as auxiliary (tonality *Vs.* atonality, instrument *Vs.* objectophone) could change the vectors of enculturation or naturalization. This is what Cox writes about when he says to **focus on the unique characteristics of individual works rather than on a system that enables the uniqueness of the works**. However, the constant search for unique features of individual works (hundreds, thousands, millions) must lead in some way to the construction of internal systems of evaluation (what is valuable and what is not) and a reflexive attempt to build a general theory of everything, some more general measure and way of analyzing and synthesizing works. *Cf.* M. Babbitt, *Who Cares if You Listen?*, [in:] *High Fideility*, 1958; *Cf.* F. Cox, *Op. Cit.; Cf.* W. Lutosławski, *Zapiski*, Z. Skoworn (ed.), Warszawa, 2008, p. 38.

[349] R. I. Godøy, *Motor-Mimetic Music Cognition*, [in:] *Leonardo*, 2003, nr 36(4), pp. 317-319.

This *status quo* is critically channeled when we talk about gestures referring to semiotic or cultural systems. Due to naturalization processes, the users of a given culture understand reflexively, and for external users, for whom enculturation is basically necessary to learn codes, idioms and grammars, it is a more complex process.

The possibility of distant understandings, culturally founded, is very well illustrated by the *case* of Curt Sachs asking an Indian musician to demonstrate his style of playing with the elimination of Europeanly understood ornaments. After overcoming the initial difficulties (getting rid of conceptual barriers) and despite the musician's implementation in accordance with Sachs's proposal, the action performed had a completely different ontological status – for a representative of the Western civilization it meant a completely natural, purely executive (i.e. subordinate) reduction to a less expressive, "purer" form, when for a representative of the Indian civilization circle it caused "mutilation" of the essence of sound, loss of its sacred weight (religiously sanctioned), and probably also of purely aesthetic value, as a result of which for the Hindu the sound "stopped laughing"[350] – which would confirm the existence of a perceptual-aesthetic barrier.

Similar communication difficulties are generated by *HCI* sonification or mathematical approaches, when the transformation of a gesture into data or formulas is associated with a far-reaching reduction of elements that are intuitively very easily readable, and very important to meet the requirements of "grammar", which enables mathematical communication or with machines (semantic meaning, intention of movement), while revealing many layers that in intuitive understanding are omitted or depreciated (and which reveal numbers – e.g. statistics, ruthlessness of measurement).

NB While preparing the premiere of my own piece *visibilium et invisibilium*, I addressed a few words of introduction to the audience gathered in the concert hall – I did not explain techniques, concepts, meanings, contexts, but by explaining the principle of operation of the Schlieren Optics streak imaging apparatus, which is the starting point for the work, I encouraged the audience to openness, search for and associate audiovisual experiences with their own experiences and beliefs etc. By bringing after the reaction and feedback expressed after the concert, this short encouragement was a very important impulse in directing the reception.

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[350] C. Sachs, *Muzyka w świecie starożytnym*, Warszawa, 1981.

3.2.1. Subject and dispatcher of the gesture

Thus, very high demands are placed first on the subject and dispatcher of the gesture who produces or transforms the gesture (Herder will say that the proper requirement is creative "genius"). At the same time, a certain controversy arises as to the extent to which impressionist-expressive momentary spontaneous artistic "vomiting" is possible, transforming psychophysical energy directly into a work of art. Kreidler notes that this may be possible with some visual arts trends, improvising musicians, but it seems that the composer is excluded within this possibility.

> "Writing a score is like creating a list of color data based on the visual impressions of the setting sun over the sea. Where the painter puts light blue and even brighter light blue over it, the composer writes the words "light blue", "even brighter light blue" or "piano", "pianissimo". From the very beginning, he deals with concepts and quantizations of impressions." [351]

Depending on the "strong" or "weak" construction of the gesture, the relation of profit and loss devoted in intersemiotic translation (focused, after all, around the problem of iconic compatibility), creating contexts through juxtapositions and differences (enabling effective surprise), but also seemingly technical treatments – readability of the score, sometimes necessary description, commentary, legibility of the intention – it depends on whether subsequent functional operators will be able to read the gesture, that is, notice, that under the words "piano", "pianissimo", there may be hidden the word "light blue" and "even brighter light blue".

Kreidler concludes: "New music is not made from music, it is created from sheet music. Composing is not making music." [352] And he continues: "Scorers are doomed to bureaucracy, to the capacity for rationality, to an almost technocratic, engineering understanding of sensory aesthetic effects, which then with a certain probability also manifests itself in other ways [functioning in life – e.g. creating internal or external order]." Kreidler sees an opportunity to blur the boundaries between music, theatre, conceptual art and media art through new compositional practices in which the paradigm of scores loses its universally binding force.

A certain mental error, criticized, as I mentioned, by Adorno can be observed in Wagner, Scriabin or Messiaen and many other artists, creating a special kind of gestures,

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[351] J. Kreidler, *Das Partiturparadigma*, [in:] *New Magazine for Music*, 2020. [translation after Kreidler done by myself].
[352] *Ibid.*

sound objects-symbols based on their own conceptual and perceptual networks, and demanding, by a fairly strict definition of the interpretative "libretto" in a relatively uniform interpretation – both the performer and the perceptor without prior theoretical familiarization may not be able to see the gesture and its proper meanings and their *gravitas* for the whole structure. Yes, it will see that it is important, that it repeats itself, perhaps even grasp fluid contextual changes and shades, but it will not be able to synthesize it with a meaning to which it has no (immediate) access (the *case* of the theme of the sword from *Tristan*, based on cultural reflexes *versus* the theme of *Liebestod*, which is a much higher and more complicated assembly – basically impossible to interpret during reception without knowledge of the composer's commentary or prior in-depth analysis of the score). Cook writes about the same thing when he points out that representation (but not metaphorical) is dogmatic bias (in this, it seems, meets Adorno), and performativity (openness to perceptual sensitivity) is the basis of pluralism. [353]

The subject and the dispatcher of the gesture generate (produce) the gesture in a special way, encode it for communication, anticipating a wide range of own possibilities, on the part of performers and recipients (e.g. calculating psychophysical reactions to a musical gesture), but also possible damage in the further process of the "deaf telephone". Many actions remain in the sphere of the subconscious and intuition, and their effects can sometimes be reproduced only at further stages of the communication process. Gestures can therefore be conscious and unconscious, although the model is the conscious expression of external intention (will), at the same time making these gestures should be controlled, limited by the rules of compositional "grammar" and its reverse "grammar" of listening.

3.2.2. Performer of the gesture

High demands are also placed on the performer. In the first place, it is a requirement that he do the hermeneutic work and that the gestures encoded by the dispatcher be discovered and – filtering them with his sensitivity – realized. Incorrect interpretation, or even a simple "accident at work", causing the deformation of even one small element, can lead to a break in the communication route between the object, symbol and interpreter.

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[353] N. Cook, *Op. Cit.*, p. 261.

The performative role of the performer transforming his movement through the interface of the instrument into the movement of sound is not only to maintain compliance with the "choreography", "script" written in the score, but also the idea, intuition of the creator, etc. The performer, therefore, also requires Herder's quality of "genius". The performer is the translator, the second interpreter (according to Peirce) of the sign written in the score. The perspective of the performer is therefore in fact a Janus perspective: on the one hand, his body is an intermediary between his own mind and environment, on the other hand, he himself is a participant in the mediation between someone else's (dispatcher) and his own mind.

The performer creates a gesture by transforming his movement into the interface of the instrument acting in fact (this action effectively exciting and modifying). Its interpretation as an abstract action, a form of sound coding and communicating one's own artistic independence to the recipient is also important. The performer is also put in the situation of performing other (accidental) gestures than producing and encoding – arising in response to sound, such as synchronizing or expressive. On the one hand, they are intended to support the quality of sound generation as auxiliary (communication gestures, synchronization, e.g. as part of a chamber ensemble or symphony orchestra), and on the other hand, they accompany, follow or imitate it (e.g. Gould's swaying, murmuring under his breath).

In a sense, the role of other performers is also revealed than one could understand intuitively – not only the music of the instrumentalist, singer, conductor, performer, but also the performance role can be attributed to sound directors making electronic parts, amplifying, mixing. A similar work of understanding and creative translation is also assigned to sound directors recording and producing the piece for public presentation. All their technical omissions, shortcomings and inabilities weigh on the communication process. A computer can also be a performer, although it makes sense, if only it is provided with a certain process of "self-awareness" (e.g. the use of *AI* in real time), so there is no question of a computer as an instrument. The computer may not make mistakes resulting from human nature (fatigue, inattention), but it may also have jams, errors, overheating, incompatibility, voltage surge, unexpected update or other circumstance that may weigh on the discontinuation (even at the micro level) of executive activities.

Gestures of the performer are therefore conscious, they will be accompanied by gestures less conscious or not conscious at all. Of great importance here are educational and enculturation processes, which certain types of these subgestures can eliminate (or, on the contrary, intensify), and build awareness of reading deeper and deeper gestural levels.

That is why I instinctively oppose the attitudes invoked by Cook (in a negative context, as if calling for pillory) of making the performer "transparent" towards the composer, such as the claims of Leonard Bernstein or Schonberg, for which the performer is only a "mediator" or "distributor". In my personal opinion, the performer has the power and power to "breathe" life into the work, with all the "life" consequences – he can destroy, ensure, as Agata Kulesza says, *basic*, improve and sometimes even correct compositional mistakes.

The performer (including the collective performer, in the hierarchical structure such as a symphony orchestra with a conductor managing the direction of performance) is, as Herder noted, a "translator" – all analogies between the system of gestures recorded sonically (inside the work) realized by sound generating and modulating (producing) gestures occur on the basis of analogy through the mimesis of expression. In my deep conviction, if it is necessary to sacrifice precision of performance in this translation for the sake of explosiveness of expression in the right proportion, it is acceptable and sometimes even preferential. The thought of performers and creating space for them to express their own expression (but not to "shift" onto them what I can compose myself) accompanies me in the conceptualization of creative intentions. Decision-making, for example, which elements should be written precisely and which should be improvisational, which should be composed a *battuta*, and which *ad libitum* is a form, as Cook quotes after Kivy, leaving in the performative "sphere of choice – free and yet pregnant for music – which takes place inside and around the written work (Kivy calls this 'the space between 'text' and 'execution' and explains it as 'desirable, intentional, and logically required ontological fact.'"[354]

Cooperation with performers, especially on the occasion of the premiere, is always a source of invaluable tips, small things "suspicious" or "overheard", and above all verification of creative intentions in the form of a collision with reality. Therefore, the score *visibilium et invisibilium*, which this description accompanies, is a revised score.

3.2.3. Recipient of the gesture

Ultimately, the synthesis process takes place in the mind of the recipient as well as a special type of recipient, which is the researcher of the work. Seeing the performer performing gestures, the recipient observes them in three perspectives:[355]

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[354] N. Cook, *Między procesem a produktem: muzyka jako performans*, transl. J. Dolińska, [in:] *Glissando. Magazyn o muzyce współczesnej, Performatywność*, nr 1 (21), 2013.
[355] R. I. Godøy, *Motor-mimetic..., op. cit. Cit.*, pp. 127-128.

(1) first-person (Me-You communication, iconic): based on observation and interpretation of one's own experiences;

(2) second-person (You-It communication, metaphorical, symbolic): based on the observation of a gesture functioning as a sociological, cultural hint;

(3) third-person (It-to-It communication, symbol symbol): based on measuring and describing the limbs of the body and sound forms as functional elements of the system ("grammar").

Me-You communication is always strongly subjective, observing from an external point of view of It-To-It only gives a certain objectivity. Objectified examination of gesture is therefore always a form of effort, which as creators, we have no right to expect from the audience in a deepened, non-reflexive form.

The basic form of analysis (classified by Schaeffer as *écouter* and *ouïr*) is always done in the mind, as it were, automatically, by unawareness. What counts above all is the impression of the perception of Me-You and You-It. Of course, only the juxtaposition of all perspectives gives a fuller picture. The success of higher-order research – interpretation based on cultural codes, signs, etc. – depends on the effectiveness of determining these basic associations.

The viewer will be placed in various situations of auditory possibilities: from *écoute réduite*, based on listening to *écouter* and *ouïr* during a live symphonic concert (i.e. the sphere of conventions and cremation resulting from them), to the studio or home situation, when the smallest fragment of the work can be zoomed, by looping small fragments of the recording, very carefully examined (also by analyzing the score, sketches, sonograms, etc.) and understood through careful analysis (*comprendre*). For the action of revealing a gesture, auditory experience alone is not enough, as Smalley or Roy would like (perhaps because they escape from the problem of interpretation, and especially integral in Tomaszewski's understanding, focusing on the analysis and interpretation of perceptual experiences), it is also necessary to get to know all other phenomenological platforms of cognition of this ontological entity, which is a musical work. At the intersection of these platforms, you can get a more complete picture of the reality presented.

Therefore, when writing about grammars of analysis and interpretation, Cook draws attention to the structure of grammars describing performative and experiential values in their specifically musical meaning, [356] moreover, forms of dialogue between normative and

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[356] N. Cook, *Op. Cit.*, p. 244.

perceptually oriented currents of description should be sought. [357] In a way, the aesthetician even emphasizes that just as thinking with the paradigm of historically informed performance has been created (both in performance and in analysis or interpretation), so too should paradigms of "structurally" informed approach, [358] which also proposes some form of "bridge" between translation systems. This is basically the main expectation that is set for this special kind of recipient, which is the analyst and interpreter (but also the music critic or curator).

Referring to Herder's straitjacket, Cook notices from this perspective a certain mental error, namely the false belief that language can simultaneously describe and contain reality, from which it follows that what cannot be described does not exist. [359] The metaphorical language so often invoked in this work is the possibility of analytical representation. The more scientific the analytical approach (in the sense of openness to empirical confirmation or refutation), the esthetician argues, the worse it is adapted to the complexity of existing practice. Hence the need to correlate (or even adapt) analytical grammars to compositional and listening grammars. "Our own words constantly threaten us to run away with us" – the abstract definition of 3:2 polymetry, as Cook cites, has its perceptual effect. [360] That is why one must be so careful – each approach (especially normative or legitimate, e.g. institutionally) creates "its own truth" by evoking "one's own perceptions".

Thus, the recipient performs two types of gestures: mental gestures – decoding the gesture encoded by the dispatcher – and on the other hand, gestures arising in response to sound – accidental, performative actions as accompanying gestures (following the sound, tracking it or imitating it). The latter result primarily from the strength and suggestion of the reflex of embodied cognition. In this situation, technological listening becomes a controlling, undesirable element. The gestures of the recipient do not have to be conscious, they can be automatically reflexive (culturally and psychophysically). The possibility of conscious reading by the recipient validates (establishes) unconscious gestures of the creator and performer.

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[357] *Ibid.*, p. 245.
[358] *Ibid.*, p. 249. *NB* Of course, I see the opportunity for the paradigm of "structural information" to emerge in a musical gesture.
[359] *Ibid.*, p. 256.
[360] *Ibid.*, p. 259.
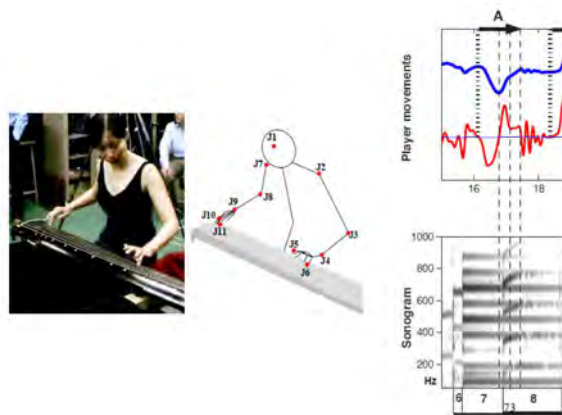
Graph 34. Godøy's third-person perspective of gesture [361].

3.2.4. Perceptually focused communication

In this "deaf phone", which is the distributor-performer-recipient communication route, the most important thing is to make gestures in compositional grammar and performance grammar (and other grammars already mentioned), which will not be indifferent to the grammar of listening, and thus the perception of the recipient.

The key importance, I think, in gestural communication is to identify this process with a number of cognitive phenomena (theories), thoroughly studied and enjoying a kind of grounding. These phenomena – such as the auditory stage, embodied experience, audiovisual contract (or related to it, similar forms) or even effective surprise – very often occur on the basis of the cumulative fulfillment of certain premises and at the same time explain various aspects resulting from the occurrence of the phenomenon. And so, the intermediality of the gesture may consist in the fact that (1) in some cases (relational understanding) it can be directly intermedia (relational music – a strategy of semantization, **performatization and visualization**), (2) being a sound structure it can be transformed, translated within various semiotic systems (a less convincing explanation), (3) being a sound structure, it assumes embodied cognition (base, dictionaries of cognitive experiences), so the reference to memory long-term (more convincing explanation).

Hence, I think that in the face of the perception of a gesture (even if it has no visual value), the boundary conditions for the existence of, for example, an audiovisual contract must be met, and this is, in the first place, ensuring the comfort of the recipient, necessary for the development of added value under an audiovisual contract. Providing comfort can

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[361] R. I. Godøy (ed.), *Musical Gestures...*, *Op. Cit.*, p. 129.

increase the "force" of the gesture, [362] its credibility, the power of persuasion and enable the perception and feeling of fleeting, unnamed or unnameable impressions, as well as – on the contrary – weaken or thwart them. Each recipient has a different level of *sine qua non*, so it is a highly individualized aspect. Zielińska indicates the conditions as follows:[363]

(1) uninterrupted data transmission;

(2) comfortable reception conditions;

(3) formally provided time for resynthesis and for the creation of added value;

(4) the highest possible technical quality of the message;

(5) referring to the long-term memory of the recipient (life experiences, dreams, cultural emblems, beliefs, knowledge);[364]

(6) the ability to persuade the recipient to empathize.

Due to the constantly subconsciously performed test of similarities and differences, which I mentioned, a number of psychophysical reactions with tension and relaxation at the forefront may be produced in the recipient. These categories are quite relevant when understanding the nature of gestures. In the common understanding of such tension generated in the listener, we can also find in contextual tensions: (1) between the gesture and its sound effect (movement *versus* effect or absence), (2) between the gesture and its meaning, (3) between the gesture and its image, etc. Playing with these tensions, built "polyphonically" on several layers of medias, makes it possible to make new formal solutions, e.g. placing nodal points of given media (in a kind of culmination) in completely different places. Therefore, the culmination will not need to be understood as a dynamic and expressive *Hochpunkt*, but rather as a peak point of intensity of the trajectory of the adopted means (actual, e.g. audial, but also virtual).

This sense of tension, as well as other mentioned ones, such as the problem of "teaching" the material to the recipient, the problem of memory, making "promises" and

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[362] One cannot ignore the small, inconspicuous sources of these gestures. I remember a note to *Sinfonia concertante* for small sound objects and percussion as well as Zielińska's large symphony orchestra, in which the composer indicated that she was looking for opportunities to express "powerful" gestures (in the psychophysical sense, but also to give them a formal rank in the work) with modest means, including the use of "waste" – mess tins, empty bottles, an egg cutter, etc. *Cf.* [Interview with Lidia Zielińska, Polish Radio Program 2, 18.09.2015 during the Inaugural Concert of the 58. International Festival of Contemporary Music Warsaw Autumn] *Sztuka słuchania* [source:]
https://www.polskieradio.pl/8/192/Artykul/1506861,58-Warszawska-Jesien-w-Dwojce-Sztuka-sluchania
[Accessed: 01.05.2023]; *Cf.* L. Zielińska, [Notka o utworze] *Sinfonia concertante, [w:] Książeczka programowa 58. Międzynarodowego Festiwalu Muzyki Współczesnej Warszawska Jesień*, Warszawa, 2015.
[363] These conditions basically meet very well with the assumptions of, for example, Lutosławski's psychological form. L. Zielińska, *Kontrakt audiowizualny, Op. Cit.*, p. 234.
[364] A special form of long-term memory is knowledge and musical skills, but also intuition. Paweł Szymański writes about it in the context of the musical "puzzles" on which he bases his surconventional works: "[...] You have to give the potential listener a chance to guess this subtext (whether he guesses – and whether he should guess – correctly is a separate problem)." P. Szymański, *Autorefleksja*, [in:] L. Polony (ed.), *Przemiany techniki dźwiękowej, stylu i estetyki w polskiej muzyce lat 70.*, Kraków, 1986, pp. 296-297. [translation after Szymański done by myself].

fulfilling them through the structure of a work of art, the test of similarities and differences or added value discussed in the context of audio-vision, can be explained from a different perspective, reconciling both cognitive and culturally (sign) rooted issues, because it may result from Brunerian effective surprise. The role and significance of this concept in Polish epistemiology was highlighted by Marcin Strzelecki.

> "The road to banality is paved with creative intentions. Surprise is not easily defined. It is the unexpected that strikes one with wonder or astonishment. What is curious about effective surprise is that it need not be rare or infrequent or bizarre and is often none of these things. Effective surprises […] seem rather to have the quality of obviousness about them when they occur, producing a shock of recognition following which there is no longer astonishment."[365]

and elsewhere Jerome Symour Bruner points out: "The act that produces effective surprise [is] the hallmark of a creative enterprise,"[366] is the production of novelty.

The effectiveness of surprise results from three areas that can be realized in musical creativity by embedding objects in new, hitherto unknown perspectives (contexts), going beyond the usual ways of experiencing the world, providing a "new instrument for manipulating the world":[367],[368]

(1) Prediction effectiveness: a kind of surprise that gives the opportunity to continue. It is not always a sudden surprise, sometimes a slow increase in knowledge and expectations;

(2) formal (iconic) effectiveness: the surprise of a sudden illumination (the moment *of εὑρήκαμεν* [*heurēkamen*]), which reveals an unexpected connection between known phenomena, but hitherto perceived separately (or as outright alien). Rather, it concerns the fields of sensory, physical and mental experience;

(3) Metaphorical effectiveness: the surprise resulting from an unexpected connection between known experiences, but hitherto perceived separately (or as outright foreign). It concerns rather cultural, thought, abstract fields.

Since Bruner's time, there has been extensive research to determine the triggers of effective surprise, including linguistic-cognitive, constructive, rhetorical, and phonological-mnemonic. These triggers are supposed to support the memory system in the virtual

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[365] J. Bruner, *O poznawaniu. Szkice na lewą rękę*, transl. E. Karasińska, Warszawa, 1971, p. 36.
[366] *Ibid.,* p. 34.
[367] *Ibid.*, p. 36 and d.
[368] M. Popova, *Pioneering Psychologist Jerome Bruner on the 6 Pllars of Creativity and How to Master the Art of "Effective Surprise"*, [in:] *The Marginalian*. 21.04.2014. [source:] https://www.themarginalian.org/2014/04/21/jerome-bruner-on-knowing-left-hand-creativity/ [Accessed: 01.05.2023].

construction of reality (including visual reality, as evidenced by the account of Bruner, who was born blind and at that time constructed the visual world in his mind) present in the musical work. [369] In this sense, perception is controlled equally by the senses and the mind, and the triggers (as functions) and effectiveness (as a result) of carrying out a creative action condition its own suggestiveness, the "power" of influence. This dichotomy results from the metaphor of the division of hands according to the properties assigned to them – right: geometry, knowledge, performativeness, left: curves, intuition, creativeness – is also present in antitheses, fulfilled jointly, and defining the conditions of creativity:[370],[371]

(1) independence (detachment from existing forms and conventions) and commitment;

(2) passion (passion, expression of inner impulses through work) and "decency" (love of form, respect for materials);

(3) the freedom to be dominated by the object (allowing the work to grow in such a way that it produces its own autonomy, enabling the production of unconscious impulses);

(4) delay (postponement of the end of the creative action due to boredom, loneliness resulting from what one wants to say and what one has not said) and spontaneity (the immediacy of grasping the direction, goal, idea – its fulfillment, realization in the work is consuming);

(5) internal drama (transformation of internal impulses into the form of *theatrum*, *dramatis personae*);

(6) the dilemma of abilities (intelligence, perseverance are important, but also trivial, of a technical nature at the same time).

The terms of an audiovisual contract are basically conditions for the correct performance of a musical work (and thus for ensuring the usual **legibility** of gestures – uninterrupted data transmission, of the highest technical level in concert conditions) is not so much a flawless performance of the work (some errors do not weigh on the reception of gestures as a whole), but the ability to reproduce gestures from the score and flawless **energetic** outlining them to build the correct atmosphere of reception of the work. For this reason, it is very important for the composer to shape the audiosphere of the work in such a way as to "tune" the recipient's ear to the "detail" as much as possible.

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[369] J. Metsämuuronen, P. Räsänen, *Cognitive–Linguistic and Constructivist Mnemonic Triggers in Teaching Based on Jerome Bruner's Thinking*, [in:] M. S. Dempsey (ed.), *Frontiers of Psychology*, 2018.
[370] J. Bruner, *Op. Cit.*, p. 43 and next.
[371] M. Popova, *Op. Cit.*

In *visibilium et invisibilium* , for this reason, I decided to introduce endlessly looped drones, lasting before and after the work, which, as I have already mentioned, introduce an atmosphere of listening and observing (and open up to a certain idea of the emergence and turning of the work as a whole into "infinity"). A number of conditions are also set for the composer himself – planning the structure in such a way as to anticipate the need for rest, the need for change, the need for a kind of purposeness (fulfillment, non-fulfillment of promises and the associated structures of tension-relaxation).

Due to the adoption of different types of gestures, at different levels and referring to different provenance of recipients (being for the first time at this type of concert, persistent melomans, colleagues "from the environment", i.e. professionals , *etc.*) constructs a framework that invites a 'polyphony of thought and impression' and, I believe, provides space for engaged reception. Intensification and dilution of musical actions in appropriate proportions (resulting in tension and relaxation, respectively), separation of the sound and visual climax (Part V) and the semantic climax (Part VI), a variety of combinations of non-musical stimuli (video, movement, visuality and spatiality of bands) are the main tools in creating the work.

The tension generated in the part I by visualizations of whip (frusta) beats increasingly slowed down and stretched in time (contrasted counterpointwise with the increasingly intensified, accelerated sound action, and emerging, using Smalley's nomenclature, sound appropriate from noise and arrows) increases – at the culmination of this part, the appearance of a very slow visualization of a sound wave coming out of whip (frusta) and bouncing off the floor and walls (thanks to possibilities of *Schlieren Optics*) is juxtaposed with the finally appearing crystallized harmonic series, as well as liturgical bells (strengthening the cultural reflex about the importance of this moment, its metaphysical character, and thus also the semantic zone) and the general impression of the audio layer having a great intensity of movement. The tension generated between the visual gesture and the other gestures, their contexts and meanings is very high, although, I hope, it is prepared by a long-term introductory process.

3.2.5. Expressively focused communication

"According to Marshal McLuhan, the nature of the medium used to transmit a message is of greater importance than the message's meaning or content. Our world is **not just how** we perceive it, **it is precisely this: how** we perceive it."[372]

For this reason – just as in the visual arts watching "me" and "you" began to be taken into account, or in literature in the universum (presented reality)[373] the "speaking self" is described – probably in the reality of the presented musical work should, I think, start to include listening "me" and "you",[374] as a musical parallel of, for example, the concept of preposteric reading of art (Mieke Bal). The perspective of watching (listening), enabling accurate reading of the message (the context of the message), is at the same time the perspective of describing the presented reality (universum, diegesis). [375] The gesture necessarily presupposes the existence of some form of "you," even if that "you" is a computer that processes strings of numbers.

"The interest in the form of 'you' has intensified in philosophy and literature as a result of the exhaustion of reflections on the 'he' and the 'me' turned towards the objective world and towards the subject itself. Both discourses are only just discovering the

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[372] K. Lang, *Linea mundi* [notka o utworze], [source:] https://www.soundohm.com/product/linea-mundi-lp [Accessed: 01.05.2023]. *Cf.* „Our perception of the world is filtered, even created by the transmission channels: a very large part of what we see and what we listen to is not simply reproduced, but elaborated and recreated by an electronic tool which redefines the nature of message and is superimposed on his concrete experience by replacing it. Therefore, if "the medium is the message", the characteristics inherent in the message are less important than those of the channel, just as the technology that allows the transmission, electronic processing and distortion of this message becomes the real object of the communication. The permanence of the real thus gives way to a continuous process of sampling, filtration, transformation and distortion. The transmission channels tend to dematerialize the various and innumerable phenomena that make up reality and to dissolve them in an electronic and hypnotic continuum." F. Romitelli, *Note de programme de « Audiodrome - Dead City Radio »*, 2003 [source:] https://brahms.ircam.fr/fr/works/work/14257/ [accesed: 01.05.2023]. [translation after Romitelli done by myself]
[373] The popularization of the concept of the construction of the presented reality (universum) is unanimously attributed to Ingarden.
[374] M. Bal, *Czytanie sztuki?*, [in:] *Teksty Drugie: teoria literatury, krytyka, interpretacja*, nr 1/2 (133-134), 2012, p. 41.
[375] The assumption of relationality of the work, the distinction (or rather disclosure) of the listening "Self" (as the equivalent of the narrator, sometimes the structure of the creator's (self-)expression, and sometimes the performer), the listening "you" (as the recipient), the temporal and spatial structure, would perhaps allow some form of parallel for musical works to be drawn in relation to diegesis in audiovision or the world presented in prose. It is impossible not to notice that the attitude to gestures is most often determined by a simultaneous relation to the diegetic function of music. This sometimes creates the impression of a paradox – Grażyna Bacewicz or Lutosławski, on the one hand, claiming that music does not express any feelings or 'tell anything' except for itself and its emotions, and on the other hand, building parallels to theatrical narration (*Quartet* and *Concerto for cello and orchestra* by Lutosławski), etc., so as not to discuss the not infrequent examples of evident (self-)expression in both artists (self-pastiche in Bacewicz's works, as well as a clearly gestural radio opera *King Arthur's Adventure* by same composer). By the way – there is an example of Franz Kafka writing the finale *Process*, so engaging and identifying with the hero of his story that in moments of elation (later deletions and corrections were made very consistently) he shockingly changed the hitherto consistently conducted third-person narrative to an ad hoc first-person one – "I raised my hands and spread my fingers". *Cf.* Ł. Musiał, *Parametry Kafki*, [in:] F. Kafka, *Proces*, transl. J. Ekier, Łódź, 2016.

potential that lies in the form of the "you" that enables new ways of representing the experience of the "me". The second-person narrative, despite the fact that it is almost a hundred years old, has not received a wide bibliography in Poland. What do we know about it? It is connected with the first-person narration, and the character, whom the narrator describes as "you" (the addressee of the statement), is usually one of the protagonists of the work, often the main character. The second-person narrative makes it possible to speak not only about the 'you' but also about the 'me'.[376]

Establishing a message, the content of a gesture is possible due to its direction – internal (introverted, communication towards oneself), external (extroverted, communication towards the recipient). [377] Therefore, not all creative procedures have to be understood. A work of art is usually treated as an abstract and general entity. However, there are known cases when it can be an individual and concrete work, or individualized and concreted in certain aspects. They are known by name and surname of the recipient of certain layers of communication in the ouvres, i.e. those "you" listening: for example, Cardinal Ascanio Sforza in arrears with payments to Josquin des Pres, which resulted in the famous madrigal *In Te Domine, spaeravi*; or Górecki sacralizing and metaphysically invoking his own mother, Olympia, in *Ad Matrem* (though it could just as easily be any mother, or Our Lady – or all of these possibilities at the same time). There is a well-known quote from Lutosławski betraying, I think, the intention to appoint a whole group of "you" listening: "My efforts are not aimed at winning over as many listeners and supporters as possible. I do not want to atone back, but I want to find. Those who in the deepest layers of the soul feel the same as I do." [378] In the end, it may be the case that the composer's finger does not point to any listening "you", and the message hidden in the work, so to speak, "goes into the ether" – just like in Renaissance music, where the lack of a uniform overall score, and only books of voices available, almost making it impossible, or at least hindering the knowledge of the work, made potentially the only recipient of numerical, proportional and many other orders, even if it is visual or symbolic, it can ultimately be God Himself – not a doer, not a listener, but the most perfect creator with great experience). It may come to mind to express an obvious thought, but the work as a multifaceted phenomenon is knowable in different ways from different perspectives. These perspectives reveal the nature of the gesture.

Gesture can be self-expressive when the choice of understanding, shaping gestures, establishing grammar communicates, exposes views, externalizes the inner truth of the

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[376] I. Siwak, *O filozoficzno-literackiej „twórczości dwuręcznej”. Przypadek Dobrosława Kota*, [in:] *ruch literacki*, a. LXII, z. 5, 2021, p. 683. [translation after Siwak done by myself].

[377] *Cf.* Theory of intense and extensive expressive semantics, including self-expression. K. Moraczewski, *Sztuka muzyczna…, Op. Cit.*, p. 125 and next.

[378] T. Kaczyński, *Zeszyt myśli W. Lutosławskiego*, [in:] J. Astriab, M. Jabłoński, J. Stęszewski (eds.), *Witold Lutosławski – Człowiek i dzieło w perspektywie kultury muzycznej XX wieku*, Poznań, 1999, p. 247. [translation after Lutosławski done by myself].

creator. At the same time, the recipient is the bonding platform, thanks to taking into account the grammars of listeners in the construction of compositional grammars, one can easily avoid artificiality, and achieving naturalness, experiencing the truthfulness of human expression in a gesture that somehow transmits pure energy.

For this reason, minimalist styles (Górecki will say: maximalist) or reductionist styles find justification as gestural, because extreme reductionism, both in terms of form or technique, allows to visualize the gesture, and the listener's "ear" sensitive, concentrated to direct directly to an interesting gesture, transformed even to the smallest extent, and to the observation of one's own psychophysical reactions. As Wielecki says: "The most important things usually speak in a whisper".[379] It can be said that the more technically limited the gesture, the more radical and introverted it is (provided, of course, that the grammar system of the work is constructed in a coherent way). This is probably the reason for the intuitive orientation of artists associated with relational music in the directions set by Górecki, Arvo Pärt, Terry Riley, Reich, Tomasz Sikorski, Galina Ustwolskaja, or their successors, including the aforementioned Lang and many others – the search for radical, unadulterated clarity of expression.

This thought has been guiding me for some time in my work. It can be said that it has evolved from multi-layered polyphonic arrangements (horizontal, easier to follow as "process", more difficult to follow as "event") to "homophonic" in the gestural sense (vertical systems), although I do not think that this causes stylistic attribution as minimalist or constructivist reductionism. I am interested in the process to which I subordinate all gestures and their components at lower levels of composition, although the detail still remains important. What fascinates me the most in the process is the composition of situations of repetition and differences.

In order to direct the viewer's sensitivity to the gesture, its "contour" and tracking the contexts of its appearance, I think primarily in spectromorphological categories of gesture and texture (as figures and backgrounds). Hence, the score visually may look little "complicated" (except for fragments, where there are more operations on the principle of "processing", gesture modulation), primarily serves the "generation" of gestures, and which is supported by the reduction and legibility of layers, so that all processes of a higher level are properly distinguished (especially quotation, or rather referential, as the opening of the reality presented visibilium *et invisibilium* in fact, depicted other works of art that produce a network of mutual translations and contexts).

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[379] A. Mądro, *Op. Cit.*, p. 99.

Despite this "reduction" visible in the score, it does not compromise the complexity of timbres, textural complexes or the use of spatiality, while the juxtaposition with other media (the part of the amateur team, tape, video and movement) as mutual counterpoints sufficiently complicates the reception as a form of a multi-layered image. Reduction is my conscious choice, and the complication is transferred to a different level of perception of the recipient than tracking *sui generis* sounds. I return here to Ingarden's view, which explicated that the view of the score itself does not prove the value of the work, because the score itself does not cover the whole ontological entity that is the work.

In visibilium et invisbilium, the diversity of listening "you" was assumed and an attempt to provide everyone with space for themselves (the possibility of effective surprise at different levels of "accessibility"). However, I think that the most important content (the culmination of meaning) is actually spoken in a whisper (through the mouths of musicians whispering words about metaphysical eyes taken from the *Bhagavad Gita*).

3.3. Extracting and grouping musical gestures

3.3.1. Generative approach

I think we can talk about musical generativity in two modes: sensu *largo* and *sensu stricto*. The former exists when the creator builds his statement on the basis of rules (both speculative and arbitrary, inherent only in his own will – not necessarily conscious). This set of accepted rules can be described as grammar, an update of what is generatively possible. Every generative order is at the same time transformative – thanks to the power of transfiguration, the "infinity" of grammar is possible: transformation, modulation makes it possible to further create an infinite number of potentially infinitely long expressions, in the musical case of sound structures, in the case of this work of musical gestures. And so, in order to produce a sound gesture, composed hierarchically of lower-order gestures, its assembly takes place in a transformative way. The dependence of generativity on transformationality in my opinion corresponds to a very human, natural feature – apart from thought, man is not able to create anything, he only processes the reality around him. [380]

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[380] *Cf.* L. Bielawski, *Op. Cit.*, p. 176.

Thus, according to Chomsky's intuition, it is a form of "tug-of-war" between generation and transfiguration, competence and performance, abstract knowledge (defining a rule-based system) and the use of this knowledge in any situation (production and reception). [381] The aforementioned Cox tilts the advantage of this tug-of-war in favor of focusing on the unique features of individual works rather than on a homogeneous system that makes the works unique.[382]

First of all, therefore, grammar is "generated", the complementary "world" of means of a given specific work – procedures, scripts, codes of the composer's production – thus concerns the rules of technical procedure. In this somewhat (but only slightly!) it resembles normative structures – general and abstract linguistic expressions, having no logical value, but having their addressee, scope of application (circumstances of application), scope of normation (indicated model of behavior). [383] Steven Feld writes about it:

> "If we treat music as a field of cultural knowledge and use the linguistic concept of generative description, then ethnomusicological explanation can be defined as theories about things that people need to know in order to understand, perform and create music acceptable in their cultures. Such a theory, like linguistic theory and ethnoscientific anthropological theory, aims to uncover the hidden rules that underlie the systemic behavior we call music." [384]

The rules of meaning ("interpreter") transforming a linguistic expression (thought, idea, idea) with a network of grammar rules into a oeuvre are inherent in the composer's will. [385] Therefore, the reconstruction of the grammatical rules set for a given work is a form of the "skeleton" of the work understood in the Griseyian sense (as opposed to "meat", corresponding to transformativeness and "skin", corresponding to sensory experiences). [386]

At the same time, as the authors of *GTTM* note, compositional grammar is the obverse of the reverse, the grammar of listening (due to the feature of nativity – competence availability – and universality – available to every human being; I, as I quote several times, also add executive grammars, grammars of analysis-interpretation, grammar of notation, etc.), which in turn falls under the laws of psychoacoustics and cognitive science, including a

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[381] N. Cook, *Op. Cit.*, p. 240.

[382] F. Cox, *Op. Cit.*

[383] However, this similarity is only illusory – I think, the art of composition requires the ability to "play" on similarities and differences, stable elements (norms) and unstable elements (deviations). Therefore, the expressions that make up the grammar should not have a directive form, since the assumption is to use procedures, but also to break them, if it is inherent in the composer's will.

[384] S. Feld, *Linguistic models in ethnomusicology*, [in:] *Ethnomusicology*, vol. 18, p. 210. [after:] S. Żerańska-Kominek, *Muzyka w kulturze*, Warszawa, 1995, p. 167. [translation after Żerańska-Kominek done by myself].

[385] In addition – valid in accordance with thetical, axiological and behavioral justifications. *Cf.* S. Wronkowska, *Podstawowe pojęcia prawoznawstwa*, Poznań, 2005, pp.11-17.

[386] *Cf.* G. Grisey, *Tempus ex machina..., op. cit. Cit.*

special type of experience which is embodied cognition or effective astonishment. Knowledge of these schemes enriches the awareness of the use of means in compositional grammar, which is justified by all respectable systems, such as the tonal system – from acoustics is derived the priority of major chords, then the first and third as roots in chord (harmonic series and Rameau theory of the inverted harmonic series), always major septimal dominant, the principles of doubling components (octaves and fifths), the basic position as the basic form of the chord (the others, especially the first and third inversions are its weakening prefigurations), the spatiality of the system (focused, extensive), scale gravity, dissonance and consonance (acoustic beats in Helmholz's view, as Guczalski proposes[387]), stability and instability (perfect cadence opposed to deceptive solutions or sequences of interjections), etc.

Finally, the grammar also establishes the rules of the relation between the surface layers (the representation of the sentence) and the deep layer (content) in the work. Generativity is actually the second "step" in building the sound system of a work (and at the same time determining whether the refinement of grammatical rules can take both at the stage of precomposition and the composition itself, and sometimes at later stages). Generativity sets the principles of transformation and directs the perceptual areas that will be used. Generativity ensures the explicitization of the system – the clearer the grammatical rules, the potentially greater the comfort of the recipient[388] and the stronger gestures and their contexts, and the easier the possibility of carrying out naturalization and enculturation processes in a long-term perspective (perhaps this is the success of the tonal system) [389]. Generativity serves to express conceptualization by establishing its rules. Generativity provides a hierarchy of gestures – lower-order gestures create higher-order gestures.

The attitude to generativity determines the compositional rules of the sense of gesture in the communicative aspect – the grammar of reading gestures – due to the purpose and position in the system of musical expression. Information resulting from the structure of a

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[387] K. Guczalski, *Harmonia nie tkwi w liczbach. O pitagorejczykach, strojach i zgodnych współbrzmieniach*, [in:] *Scontri*, nr 2, 2015, pp. 77 and d.

[388] This is what Meyer writes about in the chapter devoted to hierarchical structuring in a musical work. *Cf.* L. B. Meyer, *Explaining music. Essays and Explorations*, Berkeley, Los Angeles, London, 1973, p. 80 and next. Complex worlds, without hierarchy, escape from the possibility of observation and understanding, exceeding the possibilities of memory and prediction. That is why they are, to quote Skórzyńska, a flat ontology. Meyer proposes that hierarchy should be built on the "closures" of structures as the most susceptible to perception and isolation. Meyer's theory is one of the foundations of my proposal for a zonal approach to gesture.

[389] *A contrario* Twelve tones (especially serialism), despite the outstanding systemic explicitism, did not provide the required comfort to the recipients. Of course, exceptions can be found – Alban Berg's post-romantic dramaturgy (but at the same time a specifically surconventional and intertextual form *Violin Concerto in Memory of an Angel* is, just like *4. Symphony* Brahms' proof that ideas do not arise in a vacuum and keep coming back). However, this confirms the thesis about the need to take into account the grammar of listening. By retaining it, the listener can understand something he has never heard, only because the grammatical rules will be universal, accessible to every human being by birth, not requiring an interpretative process (resulting from knowledge, enculturation, etc.), but encouraging "simply" listening.

gesture can be read in different ways – as a computational data, as a sign, as a sensory experience, as a phenomenon, etc. However, the rules of meaning cannot be imposed unilaterally – all other grammars exchanged, which are the reverse of the same coin, will also determine. [390] Due to the theory of embodied cognition, even an abstraction can find its accidental reference in someone's individual experience (for some reason, the succession of Dominant - Tonic is commonly perceived as tension-relaxation, and the introduction of Subdominant relative to Tonic and Dominant relative to Tonic as centrifugal and centripetal gravity). Similarly, often what perceptually seems abstract could, in the compositional intention, be assigned to the mimetic (semiotic) order. Conversely, there may be a process of finding meaning in abstractly intended elements. The philosopher Flusser calls finding content in gesture a "semiotic obsession." [391] Therefore, it is necessary to verify the phenomenological ontology of the work on many platforms. At the same time, formalistic compositional attitudes very often use highly developed grammatical rules of their sound system, not necessarily meeting the perceptual capabilities of the listeners.

Generativity in Chomsky and *GTTM's* approach does not mean generating abstract sound structures and is not opposed to transformationality. Bielawski confirms this intuition, considering a generation to be one of the forms of transformation, transfer to another space. Therefore, generativity[392] should be distinguished from generation.[393]

Speaking of generativity, it is impossible not to talk about generative music *in the strict sense[394]*. As Strzelecki quotes Philip Galanter: "Generative art refers to any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art." [395] Drawing the division of the approach between subjectivity (subjectivity expressed in the creative will of the composer) and objectivity (the exposed role of the procedure), Strzelecki simultaneously distinguishes 3 types of the result of generative actions: (1) procedural: the (sound) result is

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[390] Due to the presence of rules of meaning, expressed, m.in in the hierarchy of the structure, as well as the hypothesis of the zonal construction of the gesture and pre-cultural reductive forms of gesture, it should be noted that the musical gesture cannot constitute the so-called "flat ontology", i.e. one according to which the reality of entities or objects (abstract or concrete) cannot be ordered hierarchically. *Cf.* A. Skórzyńska, *Op. Cit.*, p. 170.

[391] G. Mazzola (ed.), *Op. Cit.*, pp. 848-849.

[392] "1. 'Related to generative reproduction'
2. 'related to generative grammar'" [entry:] *generatywny,* [in:] *Słownik Języka Polskiego PWM* [source:] https://sjp.pwn.pl/slowniki/generatywny.html [Accessed: 01.05.2023]. [translation after Encyclopedia done by myself].

[393] "The process of converting various forms of energy into vibrational energy" [entry] *generatywność,* [in:] *Słownik Języka Polskiego PWM* [source:] https://sjp.pwn.pl/sjp/generacja;2461208.html [Accessed: 01.05.2023]. [translation after Encyclopedia done by myself].

[394] *Cf.* e.g. G. Nierhaus, *Algorithmic Composition. Paradigms of Automated Music Generation*, Vienna, New York, 2009.

[395] M. Strzelecki, *Generatywność w muzyce. Zarys problematyki, konteksty kulturowe i perspektywy* (lecture), Institute of Musicology, Adam Mickiewicz University, 24.05.2023. Quote. after: P. Galanter, *What is Generative Art? Complexity Theory as Context for Art Theory* [in:] *GA2003 6[Th] Generative Art Conference*, 2003, p. 4.

secondary to the procedure of action, (2) perceptually ordered: the (sound) result is adjusted to the alleged intention, (3) unambiguous: the procedure is oriented towards achieving a very specific, calibrated (sound) result. [396] This understanding, therefore, puts at its center the intention, the awareness of creative action.

The generative approach *sensu stricto has* its long tradition as a form of "objectification" of elements in the work, not to mention serial music or the stochastic and "graphic method"[397] of Xenakis[398] – these procedures were still made "on paper". Currently, the trends of the so-called *CAC* are very popular, i.e. compositions in which the computer performs an "objectifying" function in creative activities, although it should be emphasized that at this moment, writing these words, I am convinced that nothing can so effectively replace the invaluable human imagination, intuitively sensitive to the most ephemeral contexts. [399] An example of computer "objectification" in generating and modulating procedures can be the popular *Open Music* environment (with its various libraries – e.g. the popular *Orchids/ Orchidee* instrumentation tool available for use in other environments like *Max/MSP*), and related other software-ware environments (such as *SPEAR*), created at IRCAM. It is worth mentioning that his prototypes (e.g. *Patchwork*) were used by m.in. Grisey (translating into height structures the imaginary writing gesture of Piero della Francesca signing and writing the words of his treatise), Tristan Murail, Romitelli, Kaija Saariacho, Philippe Hurell, Ferneyhough, Marco Stroppa and others. Among its many applications (primarily for algorithmic composition) can be distinguished functions of generation, analysis[400] and sound synthesis. [401] On its basis, it is possible to study the morphology of sound phenomena with great altitude-harmonic accuracy, and the advantage is the graphical (including notated in the musical system) representation of the results of these processes.

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[396] *Ibid*.

[397] J. Anderson, *Xenakis' Combination of Music and Mathematics*, [in:] *The Journal of Undergraduate Research*, vol. 9, article 21, 2011, p. 185.

[398] This method is used, for example, in *Metastaseis* Xenakis, whose intricate grids absorbing motion of *glissandi* They were constructed using detailed mathematical calculations and spatial graphs translating the intensity, register, density and points of a diagrammatic graph (resembling an architectural projection or a design of a supporting structure) as musical equivalents of the physical values of mass and energy that shape Einstein's concept of time *Cf*. S. Sterken, *Music as an Art of Space: Interactions between Music and Architecture in the Work of Iannis Xenakis*, Ames, 2007, pp. 37 and next.

[399] *NB* Over the next decade, I think, it will be possible to determine how much of this statement (resulting from a deep inner conviction) will remain valid after the development of symulated intelligence, also in the field of musical art (including advanced, conceptual art), has become widespread and crystallized.

[400] For a long time, research has been conducted within the framework of algorithmic composition towards building algorithms of styles and techniques, an example is the research project carried out under the direction of Gerhardt Nierhaus, in which the work of Austrian composers was studied (including the objective construction of algorithms that can describe and imitate the technique of intuitive gestural transformations of photocopiers as output gestures in the work of Eva Reiter). *Cf*. G. Nierhaus (ed.), *Patterns of Intuition. Musical Creativity in the Light of Algorithmic Composition*, Dordrecht, 2015. A similar, very interesting value has, for example, the research of Fabio De Sanctis De Benedictis, algorithmically developing mainly compositional techniques of the twentieth century as a library for the environment *OpenMusic* (micropolyphony in style of *Lux aeterna* by Ligieti, melodic-harmonic-rhythmic-polyphonic structures in style of O. Messiaen, etc.).

[401] J. Bresson, C. Agon, G. Assayang, *OpenMusic. Visual Programming Environment for Music Composition, Analysis and Research*, [in:] *ACM MultiMedia (MM'11)*, Scottsdale, 2011, pp. 3-4.

The range of applications of *OpenMusic* is practically unlimited and is usually dependent on the needs and imagination of the composer using it, while at the same time being open to cooperation with other environments. [402]

The second form of popular computer "objectification" is reading data (especially spatial) from physical movement or other types of changes in specific systems, and through the use of various types of sensors and assigning them e.g. by mapping[403] various functions. [404] This process was usually referred to as *Human-Machine Interaction*, now *HCI*[405]. In this way, the performance of movement through the implementation of a kind of movement "choreography" has the ability to generate and modify sound, its processes, parameters, space dispositions, [406] etc. [407], [408], [409]. Similar effects are achieved using data reading tools of various types of sensors – from motion bands, through pens, eye movement readers, brain monitors, heat readers (thermometers), game pads on PlayStation or Xbox platforms, to simple smartphone applications reading the position in space.

An example combining both approaches can be Peter Ablinger's *Deus Cantando* (realized on an automaton called *Speaking piano*), transcribing the spectral structure of spoken words into "undulating" piano clusters using speech reading interfaces. Through the acoustic illusion in the perception of the audience, sound structures synthesize into the sound of human speech and with a certain concentration it is possible to understand the text from the pure piano sound. The composer calls the technique "rasterization". [410]

It seems that the spread of this type of approach influenced the approach to the issue of gesture by both IRCAM (Wanderley, Battier), Godøy and Mazzola, but also such

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[402] K. Gawlas, *Konstrukcje i przekształcenia częstoliwościowe barw harmonicznych w utworze Interferencje na kwintet fortepianowy i dźwięki elektroniczne ad libitum*, Katowice, 2013, p. 73.

[403] More about interfaces, gesture controllers and technology *Mapping*: J. Jaseau, *Gestural Controllers in Electronic Music Performance*, pp. 11 and next, [unpublished work], and as above, with a description of the structuring methodology: I. R. Godøy, M. Leman (eds.), *Musical Gestures..., op. cit. Cit.*, p. 210 and next.

[404] J. MacRitchie, B. Buck, N. J. Bailey, *Visualising Musical Gesture Through Performance Gesture*, [in:] *Proceedings of the 10th International Society for Music Information Retrieval Conference*, Kobe, 2009, p. 238.

[405] N. Baroni, C. Benzi, *Sound Gesture and Rhetoric. Hyper-cello as an Algorithmic Composer*, [in:] *Proceedings of the Electroacoustic Music Studies Network Conference Electroacoustic Music Beyond Performance*, Berlin, 2014, p. 10.

[406] G. Paine, *Gesture and Morphology in Laptop Music Performance Composition in the Timbre Domain*, [in:] R. T. Dean (ed.), *The Oxford Handbook of Computer Music and Digital Sound Culture*, Oxford, 2011.

[407] Despite the potential breadth of the approach and the seemingly accurate algorithmic transformations, Strzelecki draws attention to the problem of immediacy and interpretability of sonified data. In order to obtain convincing artistic effects, the use of kinects for example suffers from many limitations, especially in the scope of this "choreography" of the performer, who, in order to obtain specific sound results, must perform very strictly defined movements, and whose trajectory is precisely planned in advance by assigning specific values of specific functions in the generation and modulation of sound. *Cf.* J. MacRitchie, B. Buck, N. J. Bailey, *Op. Cit.*, p. 239.

[408] This "interpretation" of data may also consist in: constructing (programming) or adapting interfaces, whose role will be primarily mapping, data selection, most often in real time and preparing also the apparatus responsible for obtaining specific values. N. Baroni, C. Benzi, *Op. Cit.*, p. 11.

[409] Brochure: J. Garcia, G. Nouno and P. Lereux, *Quid Sit Musicus: Interacting with Calligraphic Gestures*, pp. 1-10.

[410] M. Pasiecznik, *Speaking Piano – wywiad z Peterem Ablingerem*, [in:] https://pasiecznik.wordpress.com/2012/08/07/speaking-piano/ [Accessed: 01.05.2023].

composers as Marek Chołoniewski, Ryoji Ikeda, Stefan Prins, Alexander Schubert. This approach is useful for creativity as well as analysis using the *CAC* paradigm[411]. It can be said that this is a very practical transformation of the concept of gesture into creative results, which currently not only does not weaken, but increases, constantly surprising with more and more perfect and interesting solutions.

3.3.2. Transformative approach

A trace of the intuition that a special feature of gestures is transubstantiation, "translation", transfiguration are numerous theories of authors with such a reputation as Helmholz, who says that the form of parallels, translation between the system of scales and the system of space, is to compare modulation in harmony, to the topophonic transition of sound in space. [412] Itis also the thought of Flusser, expressed in the recently fashionable *Gesten: Versuch einer Phänomenologie*[413], [414]. The most important in the context of this work seems to be the philosopher's remark about *Stimmigkeit* ("compatibility"), which is an artistic transformation of the emotional atmosphere using gestures. At the same time, Flusser himself understands the *modus operandi* of gestures in the same way as Plato's cave – by its shape, the shadow cast on the wall by light. Hence, the knowledge and understanding of gestures occurs through the study of their use – context and function, repetition and difference – in which their transformative power to create and give meanings is explained.

The titles of individual chapters of the aforementioned book, which are actually essays about the phenomena of various types of gesture, reduced to the level of deep metaphors, m.in. writing, speaking, making, loving, destroying, painting, photographing and filming (interestingly, there are no musical gestures despite listening to music). According to

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[411] I will mention more interesting items of generative music in direct relation to musical gestures, from the extensive material collected during the work on this text. *Cf.* M. Kozak, K. Nymoen, R. I. Godøy, *Effects of Spectral Features of Sound on Gesture Type and Timing*; L. Naveda, G*esture in Samba. A Cross-Modal Analysis of Dance and Music from the Afro-Brazilian Culture*, Ghent, 2011, [unpublished work]; M. Wanderley, M. Battier (eds.), *Trends in Gestural Control of Music*, Paris, 2000; C. Délécraz, *La paramétrisation du geste dans les formes musicales scéniques : L'exemple du théâtre musical contemporain : état de l'art, historiographie, analyse*, [in:] *Musique, musicologie et arts de la scene*, Coume, 2019; E. Hemery, S. Manitsaris, F. Moutarde, C. Volioti, A. Manitsaris, *Towards the Design of a Natural User Interface for Performing and Learning Musical Gestures*, [in:] *Procedia Manufacturing*, vol. 3, 2015; T. Köppel, N. Verstraete, J-M. Fernández, G. Lorieux, A. Vert, P. Speisser, *GeKiPe, a Gesture-Based Interface for Audiovisual Performance*, Copenhagen, 2017; C. Volioti, S. Manitsaris, E. Katsouli, A. Manitsaris, *x2Gesture: How Machines Could Learn Expressive Gesture Variations of Expert Musicians*, [in:] *Conference: New Interfaces for Musical Expression (NIME'16)*, Brisbane, 2016.
[412] H. von Helmholtz, *On Sensations of Tone as a Physiological Basis for the Theory of Music*, transl. A. J. Ellis, London, New York, 1895, p. 371 and next.
[413] Excerpts from the aforementioned publication can be found in the Polish translation in: V. Flusser, *Kultura pisma. Z filozofii słowa i obrazu*, transl. P. Wiatr, Warszawa, 2018.
[414] V. Flusser, *Gestures*, transl. N. A. Roth, Londyn, 2014.

Flusser, the phenomenon of gestures lies in the fact that at some point in the development of civilization, people need to extend body gestures with gestures of a different nature, as multimedia "prostheses". Combined with the lack of distinction of musical gestures, Flusser's beliefs would justify the phenomenon of relational music emerging with the digital revolution. In another of his essays, *Art and Therapy*, the philosopher writes: "So this kind of information is not stored, information flows in memory, and the informational knots that they are untie and they begin to disintegrate. They are no longer programmed to communicate, but by communication."[415]

3.3.2.1. Transformation inside and outside the system. Semiosis. Surrogacy

The closest understanding of transformation according to generative grammar theory is the concept of translation read as the transformation of the input data into the output by the interpreter according to the accepted grammar, thus corresponding to the semiotic Peirce triad. Modulation is the reverse of the obverse, which is generation – it can be understood as transformation from one to another, generating X from the Y movement, but also modulation (variation, replication).

Musical gestures understood differently (in terms of different sign systems) therefore require the assumption of the necessity of intersemiotic translation. The difficulty of transcreation between extremely different semiotic systems (such systems can be captured by Bielawski spaces, e.g. audial space into Euclidean space[416], or the pitch dimension into the spatial dimension captured by Michał Janocha) results from the self-limiting property of the structure of systems (which Janocha described as a mathematically understood feature of curling a dimension in another dimension).[417]

Therefore, it is difficult to speak in the case of translating the *glissando* gesture (determined by pitches, duration and timbre) into spatial (determined by the shift vector, duration and timbre) relative to the relational level of the sound space present in both cases without referring to the various levels with which the spatiality is related, such as the description of the quality and direction of sound movement (various types of morphologies, including temporal structuring much more complex than the determination of the duration of the phenomenon), the quality of spatial placement ("topofonia" in polish, spatial music), but

[415] *Ibid.*, p. 295.
[416] L. Bielawski, *Op. Cit.*, pp. 168-170.
[417] M. Janocha, *Współczesne systemy wielokanałowej projekcji dźwięku*, Poznań, 2019, p. 20, [unpublished work].

also references to altitude, ambitus of "space" (space and spectral density in Smalley's nomenclature), which in this way "self-limited" if we have to include all or most of them in both sign systems.

The mentioned example was described by Janocha along with the hypothesis that in order to preserve the perceptual possibility of "identification" of the gesture at transitions in both sign systems, at least two common dimensions (two levels) of the gesture should be preserved. [418] A similar hypothesis follows from Campos' explanation of intersemiotic translation, namely that the preservation of iconicity in both character systems is a condition for intersemiotic translation with curled layers, and at the same time the translation of any other – the selection of translated layers is therefore an expression of the translator's sensitivity.[419] In a sense, this fulfills Flusser's *Stimmigkeit* postulate. In the case of transcreation within intersemiotic translation, therefore, it is necessary to select carefully studied and selected layers from the source, and also in accordance with the goal translate into new means and processes in the target system – on the basis of subjective "conceptual mapping" between different systems and levels.

This problem will be revealed especially when it comes to maintaining the perceptual recognition of the gesture at further deviations of the infinite spiral of Peirce's semiosis (or surrogacy of the gesture according to Smalley) – the signs moving away from the original object.

Starting from the idea of visually revealed sound wave in Schlieren's apparatus , I began to treat it as the most basic gesture in the piece. To achieve the effect described in this way, for technological reasons it was necessary to use a very loud instrument (the choice fell on whip (frusta)) and use a camera "catching" about 10,000 frames per second, on which about 10 frames were recorded, showing the moment of sound wave exiting of the instrument. However – the whip strike itself did not seem to me gesturally in line with the goals of the work (yes, I use this type of gesture – aggregate-impulse-strike – very often, but subjectively it lacked for me a certain individuality [built of the swing phase and aggressive impact] and space to create contexts). Therefore, I decided to transform this gesture and look for a new metaphorical form of gesture that would be, at least on a symbolic level, legible and "open".

So I decided to objectify this gesture of whip. It consists of three distinct phases: preparatory (swing, slower, accumulating opening of whip (frusta) flaps, energy deflection

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[418] M. Janocha, *Op. Cit.*, pp. 25-26.
[419] *Cf.* J. Queiroz, D. Aguiar, *Op. Cit.*, p. 202.

and faster, more intense approach to generate sound from the movement of the hand; basically soundless phase), proper (contact of flaps, generation of dry, very loud, selective sound), final (depending on the reflex – holding the "closed" instrument, slight dissipation; resonant character, discharge of energy). The key element is the moment of sound generation through changes in the interface of the instrument – the conversion of hand energy into sound. Visually, it was at this moment, when the flaps of the instrument came into contact, that visible arcs of the sound wave separated, which at great speed reflected from other surfaces (walls, floor) returned towards the instrument. In the preparatory phase, only changes in air density (heat) are visually visible, while only in the proper and final phase sound waves are visible, in the right one as excitation, in the final phase as reflection (reverb). These observations encouraged me to search for three-phase gestures, with a clearly accentuated preparatory stage and a form of spectacular state change in the proper phase and gradual extinction in the final phase.

My attention was drawn to another gesture, also visually possible to capture in the apparatus – that is, the friction of matches (the preparation phase – friction tests, the actual one – a flash of light, the final one – depending on whether the flame is extinguished immediately or left – the duration of the light turned on, or its extinction and the pressure changes associated with it in the form of "clouds" revealed by *the Schlieren* apparatus). This gesture iconically corresponded to the gesture of whip (frusta) (maintaining phases, energy formation, intention, and "visible" state change; iconically it was richer – it generated a more diverse range of sounds appropriate for each phase), but metaphorically it created a much larger field for showing off and shaping meanings (symbolism of light, symbolism of making or not, attempts to perform an act, symbolism of appearance, duration, sudden extinction, etc.), especially in the context of the essence of *the Schlieren* apparatus, which "visibly" reveals "invisible" changes in air density. This apparatus has fascinated me since 2019, I composed a few pieces loosely related to this technology, but it was the first time when I could work with it, I could refine detailed solutions for the piece, and not just rely on materials found on the Internet.

Using *Schlieren Optics* to acquire an image has also generated some interesting contexts *per se* – the round shape of the lens, the color of the imaging and others bring to mind the shining moon, whose cycles and phases traditionally symbolize birth-life-death, having two sides – dark, invisible and light, visible, (in some beliefs this dark space is identified with the place of residence of "invisible" souls, etc.). Sometimes, however, the "eye" of the camera capturing the lens resembled a microscope, a metaphysical "Judas hole" through which and in which one could follow the hidden life. At the same time, the picture is clearly naturalistic, organic. These contexts also strengthened the adopted concept for the work and required only conceptual embedding in a broader whole.

3.3.2.2. Generation and modulation – Ludwik Bielawski's approach (spatial)

According to Bielawski, transformation is a fundamental problem for the phenomenon of gesture. It is the transfer of motion to another space by means of a transformer (it can be a musical instrument). The form of transformation is the generation[420] or modulation of movement – in the case of a performative gesture of the performer, on the one hand, mechanical movement causing changes in the arrangement of the instrument, and on the other hand, its non-physical sense and meaning. [421] Bielawski points out the general transformation model in the graph below:

Features of movement gestures	Features of musical gestures
Temporary	Temporary
Spatial	pitch
	timbre
Dynamic (movement force)	Dynamic (strength of sound)

Graph 35. Bielawski's general transformation model of the movement gestures features into the musical gestures features.[422]

Generation understood in dictionary terms (and closer to Bielawski's understanding) is the creation of a new type of movement by transforming the source – e.g. the movement of thoughts (idea, concept) into a sound structure. It is therefore an external (extrasystemic) transformation, a semiosis between various semiotic systems. Moving away from the source in semiosis will be further and further away, containing fewer elements of common systems. Generation can take place both in *abstracto*, as a "quasi-primary" separation of a musical gesture, including pragmatically understood abstract or presemiotic, or being the first transformation of an object in the original irreducible triad of Peirce's infinite semiosis. As Adorno says, abstraction has the greatest critical potential. [423] Generation can also take place *in concretu*, being carried out along the idealistic functions of the gesture – meaning, content, context.

Modulation[424] is the transformative concretization of movement on the one hand in *abstracto* through a change of function (e.g. a change in context), or *in concret* as a change

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[420] This is the problem of descriptionism – the types of sounds generated derive their names from the movement gesture (blowing, jerking, hitting, rubbing). For more information: E. Schreiber, *Muzyka wobec doświadczeń przestrzeni i ruchu, op. Cit.* pp. 103-117.

[421] This phenomenon is considered from the perspectives of various scientific disciplines – psychology, physiology and playing technique, instrument studies and physics-acoustics.

[422] L. Bielawski, *Op. Cit.*, p. 180.

[423] *Cf.* M. Pasiecznik, *Op. Cit.*.

[424] "1. 'adaptation of the strength, pitch and timbre of the voice to the content of the words spoken»
2. «change of some signal parameters under the influence of another signal»

of objectively measurable or perceptually objective parameters, a transition from one hypostasis to another. Modulation is therefore an internal (intrasystem) transformation, it would correspond to categories such as motivic development, variation, replication (semiosis within one semiotic system). Moving away in semiosis will blur the legibility of the generated object (*see: Variations* in B flat minor, Op. 3 by Karol Szymanowski, in which the transformations are so far-reaching that the theme in the last variation can barely be recognized). The meaning of such an object within the system of the oeuvre, established by the composer as a *Bedeutungssymbol* (a sign in the system, e.g. assigning it a thematic rank) and shaping the relations between different objects may be based on non-semantic principles, even if it were to be the reception of only the output data. This would therefore apply to works of art expressed in a "structuralist" approach, e.g. serialism.

The basis of both types of transformation is, of course **, iconicity (iconic analogy), it allows us to make new discoveries about the source object of the sign, by observing the features of the sign itself (as Bielawski would add: perceptible in various spaces). Space is, in a sense, an immanent feature of the act of transformation.** In this sense, the generational difficulty of the gesture would particularly concern such aspects as timbre, which is difficult to translate into other sign systems (subjectivized reception, *vide:* synesthesia and the problem of hierarchy).

In Bielawski's work, the potential of transformation is emphasized according to certain psychoemotive features (embodied cognition), as the possibility **of partial** (implicative) transformation; and in principle the practical application of Peirce's pragmatic maxim: S is replaced by the prediction of the effects of S, e.g. the experience of piercing, slightly disturbing sounds of a storm (thunder) associated visually, sonically and emotiously. The transparency of the transformation as a whole, its comprehensiveness, effectiveness and suggestiveness allows to achieve the above-described effect, which takes on the character of added value. This brings to mind the concept of the audiovisual pact and its results. [425]

The transformation of one dimension into another entails the potential to break to a greater or lesser extent the continuity of the *sui generis* structure or its perceptual perception. Therefore, the transformation understood in this way should be perceived as lossy, which in turn leads to a weakening of the integrity of the initial gesture and the gesture transformed in the perception of the perceiver. The degree of loss, damage depends on the

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3. "Transition from one key to another"
4. 'change in the intensity, colour and pitch of the sound in singing'" [entry:] *modulacja, [in:] Słownik Języka Polskiego PWN* [source:] *https://sjp.pwn.pl/sjp/modulacja;2484221.html* [Accessed: 01.05.2023]. [translation after Dictionary done by myself].
[425] *Cf.* M. Chion, *Audio-wizja, Op. Cit.*, pp. 100 and d. and 148 and next.; L. Zielińska, *Kontrakt audiowizualny, Op. Cit.*

level of complexity of the transformation (mainly based on moving away from the source object in the semiosis spiral), and both for this reason and perceptual skills of referring to long-term memory, one can talk about strong and weak gestures.

3.3.2.3. Gesture interconversion — Phillipe Tagg's approach (semiotic)

One of the proposals for understanding and exsecuting the "translation" of gestures within external visual and audio systems is proposed by Tagg. Gesture interconversion (or simply gesture conversion), as the theorist calls it, is a two-way process of mutual transformation of entities along an anaphonic relation (sound analogy) between the medium of music and phenomena that are in relation to music. [426] This transformation is, on the one hand, subjective, because it concerns particular internal sensations, and objective, concerning the external characteristics of objects (animate and inanimate) located in material space.

Thus, interconversion is: (1) externalization (projection) of the inner experience expressed by the gesture into an external phenomenon and (2) internalization (transfer) of external phenomena through a gesture corresponding in some way to the objectively measurable properties of external phenomena.

Tagg gives an example of the processes of externalization and internalization taking place, so I follow him:[427]

(1) outline of the shape of the object: indisputably objectively measurable;

Friction of matches – movement of the hand, continuous, repeated, but intermittent, until "inflammation". It emits sound, smell, sensory experience – both friction, tearing and inflammation.

(2) drawing an outline with the body: internalization into motor (with simultaneous change of scale and the possibility of simultaneity of different scales) through movement: experience of displacement in time and space, experience of changes

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[426] P. Tagg, *Music's Meanings..., op. cit. Cit.*, p. 502 and d.
[427] *Ibid.*, pp. 505-506.

in the configuration of the hands (wrists and elbow), in scales (both 1:1, but it is possible to find other similar ones in other scales);

(3) charting (graphing) curves: externalizing experience into visual.

Tagg's concept is thus a form of Peirce's semiosis carried out along a community of experiences unified by both the iconic form and the predicted effect.

slight "bend" of the curved hand = experience of stroking = gestures "No, not here! Go away!" = waves crashing against the beach sand = visual curvatures of the human body (counterpost) = fast spatial jumps = ping-pong = gravity and levitation, etc.

Tagg consequently formulates three premises for gesture interconversion:[428]

(1) The commonality of features derives from the mediation of the objective properties of phenomena by human gestures and sensory experiences (somatic, kinetic and sensory), which in a given culture already have an established reference to the same objective phenomena.

(2) It is possible to project human gestures onto all matter and objects perceived in the manner described above as having the same general characteristics. Unification is possible by perceiving phenomena in appropriate perspectives (i.e. finding a common layer) so that a specific type of gesture coincides with the perceived form, shape, surface or movement of the phenomena discussed.

(3) Just as a human gesture can be applied to gestually compatible external objects, so the same external phenomena, if seen from the right perspective, can also be transferred through gestures.

A very interesting observation of Tagg is the understanding of spatial uniformity as the search for such a configuration and perception of it that would allow parallels to be carried out at scale. The gesture is therefore a form of miniature of a phenomenon to which it has a reference, taken out of context (like the small Eiffel Towers), which sometimes has to be grasped with some difficulty (such as the search for the famous perspective of Canaletto on the Vistula River in Warsaw) in order to understand the meaning of the operation.

It is also interesting to point out as obligatory cultural provenance of such an operation (as opposed to unifying perceptual mechanisms of a precultural nature, such as

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[428] *Ibid.*, pp. 507-508.

embodied cognition), which stands *in a contrario* position in relation to some of the theses cited in this dissertation. Personally, it seems to me that these transformative operations betray (organize the perspective) history, style, epoch, ideological provenance, etc., but they are not their immanent component, determining their essence. I will explain this intuition in the next chapter.

3.3.2.4. Hypotheses: the eternal return of archetypal gesture figures and their zonal construction

In one of his articles, Klaus Lang[429] devoted attention to a specific conversion of spatial experiences into musical ones – a sense of displacement along distance embodied (internalized) into Renaissance musical forms *of ricercar* and *toccata*. The elements that build these forms (techniques, genres), such as intense striking in the case of the latter, are elements present throughout the history of music, traditionally and reflexively referred to as toccating. On the one hand, it is a form of naturalization of categories into a form of convention, on the other hand, this convention did not create a uniform system of signs, a dictionary, but rather signs were adapted to the ideological content, producing many proposals – between the toccatas of Alessandro Piccini, the toccatas of Dietrich Buxtehude, the famous Bach's Toccata in D minor BWV 565, *Toccata* from *the Violin Concerto in D major* Stravinsky or Lachenmann's *Toccatina* is not only an epochal, aesthetic, but also an ideological abyss.

Due to the methodological adoption as an important paradigm of thinking about the transformation of gestures, the model of the spiral of Peirce's semiosis can be put as follows. Infinite semiosis is a reducible process – along with moving away from the originally marked object, it is possible to some extent to trace the "history" of translations (marking signs) as certain forms proper to style, epoch or cultural provenance. Reducing towards the source object or the first transformations allows to reveal certain archetypal forms, such as the comparison of the movement of the hand raised up and down in musical performance and the movement of sound structures referred by the ancient Greeks and the Middle Ages to stress (*ἄρσις [ársis]*) and relaxation (*θέσῐς [thésis]*). [430]

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[429] K. Lang, *Distanz und Figuration* [source:] https://klang.mur.at/?page_id=289 [Accessed: 01.05.2023].
[430] L. F. Hackenlively, *The Fundamentals of Gregorian Chant. A Simple Exposition of the Solesmes Principles Founded Mainly on Le Nombre Musical Grégorien of André Mocquereau*, Tournai, 1900, p. 81.

Smalley reveals similar thinking, indicating the archetypes of the trajectory of energy and motion of sounds (dependence of density and spectral space on dynamic morphological formation), grounded in the spectral, Griseyan understanding of the phenomenon of sound, which is to have **its three phases**: birth-development-death (beginning-development-ending, attack-continuant-terminations). [431] All types of the triad were assigned subtypes of a descriptive and metaphorical nature. [432] As archetypes, the basic forms to which more developed operations can be reduced, Smalley distinguishes the following:[433], [434]

(1) attack: instantaneous energy impulse;

(2) attack-decay: the attack is prolonged by resonance;

(3) Graduated continuant: continuity of sound.

According to him, the history of compositional music is formed by sequences of variants (resulting from the manipulation of duration and spectral energy of phases) of archetypes, their superpositions and fusions. In principle, infinite combinations of them can arise. Due to the fact that they are archetypes, they are a form of naturalized compositional categories, so they cause a specific set of reactions in the recipient, especially building expectations (moving away from the starting point or approaching the point of arrival). They can therefore be a form of musical universals. [435] Sloboda seems to be writing about the same thing when he refers to Schenker (in the context of Chomsky): "he used to maintain that at a deep level all good musical compositions have the same type of structure, and that this structure speaks of something about the essence of musical intuition."[436]

According to my intuition, in reducing the infinite number of potentially infinitely long sound expressions to their source, one can distinguish a finite number of primary sources, of the nature of significant observed cognitive experiences, especially the experiences of the human organism and the most primordial forms of psychic sensations, described iconically and metaphorically, whose common source is the experience of stability and instability, and from which it originates (by virtue of semiosis) a whole series of traditional sound operations (the enumeration is propositional, open):[437]

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[431] It is not without reason that it fits into the spectral perception of the dialectic of the "life cycle" of sound as reified, and almost personified.
[432] D. Smalley, *Spectromorphology: Explaining...*, *Op. Cit.*, p. 117 and next.
[433] D. Smalley, *Spectro-Morphology and...*, *Op. Cit.*, p. 69 and next.
[434] R. I. Godøy refers to this indirectly, though I think more intuitively, in the context of Schaeffer's thought (archetypes: *sustained*, *impulsive*, *iterative*). *Cf.* R. I. Godøy, *Images of sonic...*, *Op. Cit.*, p. 58 and d.
[435] *Vide:* P. Podlipniak, *Op. Cit.*
[436] J. A. Sloboda, *Op. Cit.*, p. 14.
[437] In this sense, I expand my understanding of Tagg's internalization and externalization with respect to these biological and psychic sensations.

(1) muscle contraction-relaxation (proprioception) / constriction-expansion / acceleration-deceleration / inhalation - exhalation / hold-let go / fill-defecation / press-let go / tension-relax = consonsans-dissonance / dominant-tonic (VI) / parallelism-contrast / dynamics-static;

(2) fluid-point motion (balance) / condensation-dispersion / focus-scatter / order-disorder / direction-no direction / continuity-discontinuity;

(3) internal-external / structural-relational / directly-metaphor / filtered sound-"fullness of sound" / intention-attitude;

(4) presence-absence / strong-weak / certain-uncertain / repetition-difference / prediction-surprise / full-emptying / density-thinness / – indfyderentity-engagement;

Patterns about which I am less convinced (in a sense, they are *quasi* higher-degree complexes of previous ones, so reducible), and yet are potentially universal experiences:

(5) experience of balance and *loci*: higher-lower/forward-backward/sideways (as directionality, vectoricity, displacement and location);

(6) weight experience: heavy-light;

(7) experience of shape and dimension in space: fat-thick;

(8) the passage of life experience, including in life cycle experience: birth-duration-death/arising-abiding-fading /attack-continuant-termination.

(9) experience of color, brightness, pain (nonoception), social and psychological experiences, etc.

Potentially problematic (as an open field for research and artistic implementation) may be patterns of experiences that have a historically established weak connection with sound, or are simply experiences that do not belong to humans:

(10) the experience of taste, smell, temperature, echolocation, ultrasound, electroception, magnetoception, hydrological environment anomaly monitoring, etc.

Due to the direct reference to primary experiences without cultural and symbolic systems, it can be said that these are precultural forms of gestures, the use of which as basic form-forming and sound-forming processes in music is intuitive. Often many complex processes can be reduced to these original shapes as their specific "colors". The dispute about whether these relations can be present in (through) sound, whether sound structures are just an analogy (iconic, metaphorical) seems to intersect Peirce by equating, identifying the reaction to the object, the effect it has with the object itself. By this I mean that if music

exerts a sense of tension and relaxation on the recipient (the effect exerted by the object), then it can be said that musical structures are gestures of tension and relaxation, or even tension and relaxation (the object).

Reduction is therefore a form of introducing a platform not so much unifying as agreeing and is a form of William Occam's razor – on the one hand, reducing layered assumptions, concepts into a clearer, organically natural and conceptual-sensually accessible way. On the other hand, the use of Occam's razor already in relation to gesture as a concept that does not find its full-fledged and proper counterpart in the current theory of music (even the use of conceptual complexes does not seem to exhaust gestural complexity) confirms the correctness of its use.

Drawing a parallel with Bielawski's zonal theory of time, [438] and in fact applying it in the context of gestures, I think it is necessary to adopt the zonal theory of gestures, which, along with the smooth transition to an increasingly higher level of composition, are observed as a new gesture, or at least a modified gesture. These levels can be perceived from the smallest independent particle in the work, through their compositions (including the perception of similarity), the dramaturgy of the whole, the whole work as a gesture, or – crossing a certain zone barrier – a series of works as a gesture (also due to the preposterical bond of mutual commentary) that shapes the style, trend, epoch.

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[438] Methodologically also derived from Peirce, *Cf.* L. Bielawski, *Op. Cit.*, p. 49. *NB* We should also mention Godøy's already mentioned intuition about time scales (peculiar perceptual "zooms") of perception of sound-movement objects and mental scripts of embodied cognition. *Cf.* R. I. Godøy, *Timescales for sound-motion objects*, [in:] E. Tomas, T. Gorbach, H. Tellioglu, M. Kaltenbrunner (eds.), *Embodied Gestures*, Vienna, 2022 or R. I. Godøy (et al.), *Exploring...*, *Op. Cit.* Not without merit are also the already mentioned concepts of Meyer's hierarchy, Chion's musical myth or Bregman's auditory scene.

- Fragments, hyphae
- Lower-order assemblies (both gestures and gesture constituents)
- **ZONE OF PROPER CONTEXT (gesture as a synthetic whole):**
  Semiosis (+ pragmatic maxim): Source object (gesture) – Semiosis 1 – Semiosis 2 – Semiosis 3 – [...]
- Higher-order assemblies (gesture + gesture...)
- Phase (stage) of the oeuvre
- Layer (medium, technique) of the work's dramaturgy
- The whole dramaturgy of the work
- An oeuvre as a gesture
- Complex of oeuvres as a gesture
- Genre as a gesture[439]
- Style (home, outdoor) as a gesture
- [...]

Graph 36. Zoned gesture schemata proposition.

Two vectors are visible: vertical (hierarchical, distinctions as a new unit) and horizontal (transformational, varieties, variants, semiosis). Semiosis as a sign action is possible at any of the vertical stages. However, each of them preserves, as Hatten and Adorno note, a certain of its original contextuality (trace of, for example, the artist-performer's action, atmosphere, dramaturgical intensity, sense of purpose, etc.) as an "ark" – e.g. separating the phases of the sound structure (attack, resonance) is in a way creating a closed whole abstracted from its initial context. Assemblies of higher and higher levels, in addition to the fact of generating a new whole (and thus a variety of transformation), store not only the contexts of their constituent elements, but also produce "added value", their own context. Hence, I distinguish the zone of proper (or maybe full) context, in which the components of the gesture merge it into a homogeneous "ark" having both the contexts of lower-order elements and this "added value". The lower the level, the greater the probability of iconicity, imagery, concreteness, graspability (categorical). The higher it is, the greater the probability of the necessity of arbitrary metaphorical, systemic, conventional, cultural operations, as well as abstraction and intuition (hypothetical judgment). Higher and higher

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[439] Being aware of different understandings of "species", I see the possibility that it will not always be possible to read gestural. Genres, especially these understood in close connection with *Prâxis* (e.g. liturgical music, vocal-instrumental music) They can be too general and broad. When I talk about genres as a gesture especially mention those that embody forms of experience Psychophysical e.g. dance music.

assemblies are more and more extended to observe, lower and lower – more and more selective (short, concise).

When creating the "catalogues" of gestures for visibilium *et invisibilium*, I relied on the well-known mechanism of Peirce's semiosis and his pragmatic maxim. On the one hand, it required the process of precomposition, prior preparation and verification of possibilities – both gestures in the sound sphere, as well as video, visual, verbal, spatial gestures, etc. On the other hand, the multiplicity of translations resulted in the generation of such distant associations and complexes that I decided to leave some of the gestural decisions regarding their generation and modulation to the stage of working with the score (in which I have a more accurate picture of the juxtaposition of *kairós* in my work, as well as closed *kairós* in gestures), without determining them "speculatively" beforehand. In order to leave the workflow compact, and at the same time to explicate the assumptions, I will present a number of transformations.

The gesture of extracting the sound from frustration was "first" and it was around it that I focused my initial search. At the same time, I decided to immediately generate it in a different type of gesture – match friction. So:

O: Whip (frusta) observed with *Schlieren* – S: Match observed in *Schlieren* – I: Dominik Puk

At the same time, it was an action that weakened the readability of the link to some extent at the very beginning, further transformations are lossy – on the one hand due to taking out of context, on the other – to transformation.

Examples of assemblies and gestures explaining the match gesture:

Graph 37. "Friction" gesture: prolonged attack, crystallization in the audio-playback (a sample of friction ending with the light being turned on), resonance (in orchestral part and audio-playback). *visibilium et invisibilium*, mm. 3-4 (reduction).

Graph 38. The "friction" gesture: attack-resonance. *visibilium et invisibilium*, m. 8 (reduction).

Graph 39. The "friction" gesture: attack-resonance. *visibilium et invisibilium*, m. 12 (reduction).

Graph 40. "Friction" gesture: attack (double bass, saxophone, bassoon) – resonance stretched in time (strings). *visibilium et invisibilium*, mm. 32-34 (reduction).

Graph 41. Gesture-reference (Filidei): attack-resonance (two-layer – strings with accordion versus woodwinds and brass). Attempt to convey the polygenic quality of friction (repetions of sounds, *vibr.*). *visibilium et invisibilium*, m. 59 (reduction).

Graph 42. "Friction" gesture: combining several layers (*tutti* attack at once; strings with accordion and crotals: attack-resonance; cl, sx, cr, tn with pf and ar: resonance; cfg: background) of the same gesture, into a synchronizing "weave". *visibilium et invisibilium*, m. 59-64.

Graph 43. "Friction" gesture – prolonged attack, shortened resonance (at the moment of crystallization). *visibilium et invisibilium*, mm. 62-64 (reduction).

Graph 44. The gesture of "friction": attack-resonance, postponing the conclusion in time (weakened, unsatisfactory, but clearly closing). *visibilium et invisibilium*, mm. 109-115.

Graph 45. The gesture of "conclusion": materialization of hamonic spectre. *visibilium et invisibilium*, mm. 136-138.

Graph 46. Gesture attack (tutti): resonance (piano, harp, percussion), dispersion of a previously clarified provisional conclusion. *visibilium et invisibilium*, mm. 142-146 (reduction).

Graph 47. The gesture of "friction": renewing the attack, raising expectations for a conclusion. *visibilium et invisibilium*, mm. 266-274 (reduction).

Graph 48. "Friction" gesture (vno I): previously weakened attack, repeated without conclusion juxtaposed with the gesture of "reverb" (altri archi) – dispersion of partials of harmonic series C and G. *visibilium et invisibilium*, mm. 275 (reduction).

Graph 49. The gesture of "friction": attack (*arpeggio*), lack of conclusion (resonance in the form of *glissand*i). *visibilium et invisibilium*, mm. 79-81 (reduction).

Graph 50. Gesture-reference of "friction" (Bach): attack (*arpeggio*), repeated, leading to harmonic conclusions (building harmonic tension). *visibilium et invisibilium*, mm. 287 (reduction).

Graph 51. Gesture-reference of "friction" (Bach): distortion by techniques (inhalation-exhalation in wind instruments). *visibilium et invisibilium*, m. 288-290 (reduction).

Graph 52. Gesture-reference of "friction" (Grisey): attack (repeated), conclusion (distorted, "arpeggiated" appearance of harmonic series). *visibilium et invisibilium*, m. 288-290 (reduction).

180

Graph 53. Gesture-reference of "friction" (Stravinsky): attack-arpeggio, repetition (weaker and weaker), without conclusion. *visibilium et invisibilium*, mm. 306-310 (reduction).

Graph 54. Gesture-reference of "friction" (Bortnowski): attack-arpeggio, repetition (increasingly weaker), without conclusion. *visibilium et invisibilium*, mm. 94-98 (reduction).

There are more similar gestures to the above-mentioned ones, e.g. the "friction" gesture-reference (Zielińska) in the audio-playback part - distortion, stretching, lack of concussion. *visibilium et invisibilium*, mm. 261.

Graph 55. Granules (music boxes) – the gesture of "continuation": a process based on impulses alone, without homogeneous attack or conlusion, pure duration. *visibilium et invisibilium*, m. 2 (reduction).
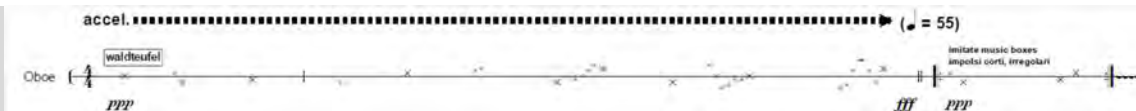
Graph 56. Granules (waldteufel) – "continuation" gesture: a process based on impulses alone, without a homogeneous attack, but with oscillatory characteristics (polygenization of continuation). *visibilium et invisibilium*, mm. 18-20 (reduction).
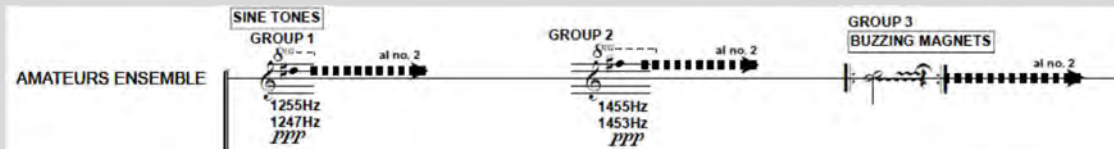
Graph 57. Acoustic Beat – a gesture of "continuation": no attack or conclusion, pure duration. Separately introduced gesture of "attack" – tossed magnet olives. *visibilium et invisibilium*, m. 332 (reduction).
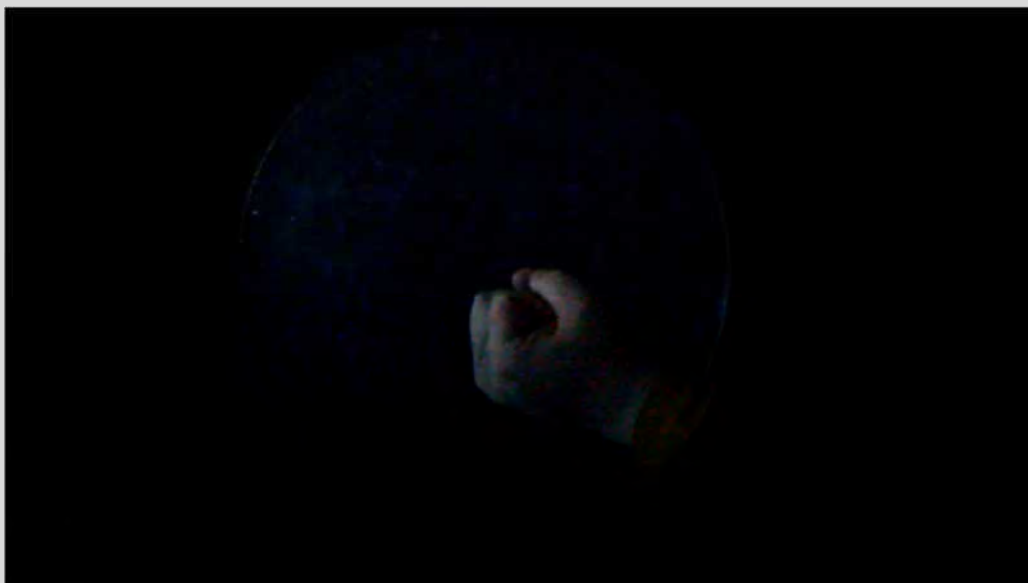
Graph 58. The "Picardian" gesture: an attack in a visual layer, a resonance in an orchestra. *visibilium et invisibilium*, m. 411 (video).

Graph 59. Balloon piercing gesture: renewal when the needle gets as close as possible to the balloon's surface "cut off the gesture". *visibilium et invisibilium*, mm. 326-355 (video).

As a result of assembling gestures into larger, synthetic wholes, it was possible to abstract new gestures, of a higher order of assembly - e.g. the gesture in Graph 40 (wind instruments), a new gesture processing the gesture from Graph 39 (tape - stretched in time by many hundred percent), the gesture in Graph 30, composed in the section of the orchestral number 5. The chords adopted as the harmonic basis result from the gesture in Graph 39 (reference to a quote by J. s. Bach). At the same time, the proximity in time with the gesture of Graph 33 and 43 are supposed to be a "connection of gestures", as if it were the same gesture observed in different time perspectives (Graph 39 - impossibly stretched, distorted, 33 and 43 - intensified, condensed). At the same time, a series of gestures is introduced in a "chain" manner, superimposed on previously initiated processes, e.g. stratifying temporal systems in part IV (mm. 326-355).

In a sense, the whole form of the work (as almost the highest hierarchical level) corresponds to the construction of this gesture: preparatory (building, retrying, without much conclusion, or temporary "not so strong" stage conclusion) – culminating (crystallization of conclusions) – resonant (dispersion). The process of generating gestures was based on the breakdown of these phases of the gesture itself and multiple assemblies, juxtapositions of these phases like *Lego* bricks.

3.4. Gesture space(s)

"Sound, as physical energy reflecting and absorbing into the materiality around us, and even one's self, provides a rich platform for understanding place and emplacement. Sound is always already a trace of location."[440]

According to Bielawski, the transformation of the gesture, as already mentioned, is a fundamental problem, because it serves to transfer movement to another space using a transformer, providing gestures with generative vitality. Similarly, intersemiotic translation serves to transfer a sign from one semiotic system to the target system by using common elements of both systems by the translator. Already in this juxtaposition of two similar understandings of transformation, one can also see a double understanding of the space (dimensions) of the gesture: (1) as a physical, topological space (included in the dimensions of Euclidean geometry) and (2) as a space captured virtually, metaphorically (e.g. in other semiotic systems) and the dependence of these contexts on the perception of the recipient, who can smoothly, contextually make a transition between understandings.

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[440] B. Labelle, *Acoustic Spatiality, [in:] SIC – Journal of Literature, Culture and Literary Translation*, 2 (2), 2012, p. 1.

3.4.1. Real and metaphorical space

The experience of this double intentionality is present in the formation of the conventional, commonly valid in the Western musical tradition: space-time, where the passage of time is iconically represented as a proportional spatial transition from left to right, capturing the processual (periodic) character of sound events, and the pitch (spectral) element metaphorically presented as the transition of the position vertically, elevatory, corresponding Reflexive perceptual intuition: Sounds with a higher frequency are placed "higher" and those with a lower frequency are located "lower". Musical notation since the Middle Ages is based on the presentation in the form of a graph of the function x from y of two measurable distances (intervals) between sounds, as their basic dimensions:

(1) vertical dimension (pitch, frequency);
(2) horizontal (temporal) dimension.

The score is therefore a vertical-horizontal structure. Janocha draws attention to the fact that the pitch dimension is perceived as less independent and dependent on the temporal dimension, and that this dimension (as frequency) contains some internal values (as a curled dimension) that go beyond the usual purely pitchal information (e.g. harmonic spectrum quantized relative to the basic tone), similarly the time parameter (not only indicates the duration, but also the moment of the appearance of the sound, the number of wave deflections in time). [441]

Janocha also indicates other dimensions – such as timbre (a dimension coiled in frequency and time, created by the proportions of the energy of a multitone harmonic), or five-dimensional physical space (known from Euclidean geometry, perceptible to the listener along each dimension), in which position distances can be observed relative to the x, y and z axes (elevation). [442]

As a result, a hypothesis is proposed in which "musical gestures taking place within any two dimensions of the sound space can be transferred to the plane of any two others". [443] The transformation between dimensions therefore requires mainly the preservation of an iconic and, to the extent necessary, a metaphorical feature. Janocha's position is therefore pragmatic (formalist).

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[441] M. Janocha, *Op. Cit.*, p. 22.
[442] *Ibid.*
[443] M. Janocha, *Op. Cit.*, p. 26. [translation after Janocha done by myself].

These considerations coincide with Bielawski's considerations. As two planes of observation of movements in perception, Bielawski indicates time (the unifying plane, thanks to which transformation is possible) and space (the differentiating plane, which is the subject of transformation). "At the root of time and space as context lie the linear scales of time and space." [444] Space in this case is understood as all dimensions in which motion is possible, and therefore not only physical three-dimensional space. [445] The types of movement space stretched between the emotional and aesthetic layers are indicated:

(1) **Somatic**: the location of dynamic, energetic structures, having its primary source in muscle tension and relaxation. Felt internally through somatic, sensual movement – muscle tension, touch, temperature sensation, taste, smell, pain. The transformers of the movement of somatic to audial space are speech and music;

(2) **audial**: has dimensions of height, volume, color and elevation (position in physical space);

(3) **physical:** corresponding to topological space in Euclidean dimensions;

(4) **visual**: it has primarily three dimensions of motion perception (introduced motion without the need for transformers) and other dimensions, such as light intensity or color (the introduction of which into space requires the use of transformers);

(5) **Symbolic (mental):** It has an indefinite number of dimensions. Understood in three ways:

    a. movement, train of thought at different tempos,

    b. movement of images of representational objects,

    c. the reflection of somatic movement, if only it is conscious.

Movements are encoded in it by: [446]

    a) getting to know their respective possibilities,

    b) movement experience.

Transformation is the transfer of motion to another space by means of a transformer relative to the features of both spaces (convergent – temporal to temporal, dynamic [force] to dynamic [intensity of sound] – and divergent, which require interpretation – spatial [topology] to spatial [pitch-color]). Enabling the process of interpretation, therefore, is opening the transformation not only to the preservation of features in an iconic way, but also metaphorically (in a broad sense). [447] Bielawski's position is therefore idealistic.

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[444] L. Bielawski, *Op. Cit.*, p. 181. [translation after Bielawski done by myself].
[445] *Ibid.*, p. 167 and d.
[446] In this sense, Bielawski's thought meets Tagg's concept.
[447] L. Bielawski, *Op. Cit.*, p. 170 and d.

Basically, it should be noted that the temporal dimension in both conceptions should always be "pulled out of the brackets" as obligatory. Two explanations for this phenomenon can be considered:

(1) The temporal dimension **makes it possible to perceive sound structures as distinguishable units.** Therefore, each dimension is and will be perceived in dependence on the temporal dimension (as a collapsed dimension). This disclaimer applies to music created for performance and reception in the traditional sense;

(2) The time dimension **makes it possible to perceive changes in the quality of sound structures.** Any percipiable activity that can be grasped as a musical action (i.e. as a processual structure) "happens" in time, even stretched beyond the perceptual capabilities of one man (*Casus Organ2/ASLSP* [*As Slow as Possible*] by J. Cage). It seems that the extent and intensity of phenomena is the first feature that is perceived perceptually psychoacoustically and therefore obligatorily subject to the process of comparison with other features of experience. This does not mean, however, that the temporal structure of the gesture cannot undergo transformations without preserving its essence – e.g. augmentation, diminution – this means that these transformations are subject to continuous extension reference.

The understanding of space (dimensions) in the oeuvre will therefore correspond to the two axioms outlined above. For example, Smalley, adopting the assumption of rejecting interpretiveness for his spectromorphology, focuses on the formalistic position (of course, allowing the phenomenon of embodied cognition as the source of this metaphor): he distinguishes global space as a topological category, both actual and imaginary (horizontal), and the local space of spectromorphology (vertical, and at the same time reflecting the quality of horizontal processes).

Vertical (spectral) space is the quality of sound, timbre and pitch in the spectrum of audible frequencies, as the distance between the lowest and highest sounds. This concept is juxtaposed with the concept of **spectral density**, operating with opposite axioms of transparency and opacity, answers the question of how gestures or textures are able to stand out in the context of distance perspective and considered with the general space.[448]

On the other hand,   space understood **topologically** as the location and trajectory of sounds in physical space is divided into composed space – actual, determined by the

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[448] D. Smalley, *Spectromorphology: Explaining..., op. cit. Cit.*, pp. 127-128.

composer (e.g. stereophonic space for speakers, or orchestra arrangement for acoustic works: **internal** – due to spectromorphologies – external – due to the location and trajectories of sounds) – and **listening space** – which is received in the listening process. In this context, the mind is seen as an intermediary between the body and the environment (space). [449] As Cassirer says, "space defines the event, it exclicates the form of life."[450],[451]

3.5. Summary of subjective, transformative and spatial issues

At this point, it is worth mentioning the practical dimension of approaching the subjects of gesture in the context of the application of the transformative concept and the concept of space. It justifies the Western paradigm of perceiving a musical work as a work of art, taking place in the triangle: composer-performer-listener. [452]

Each of these categories of subjects is entitled to an emblem, a causative artifact: the composer has a score (or any other form of articulation of the work), the performer – a gesture (in the narrow sense, performative, perceived in three-dimensional space: pitch, position in physical space and position in time), and the listener – **perception** (perceiving) sound phenomena (and thus basically their mental image and reactions derived from it).

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[449] D. Smalley, *Spectro-morphology and...*, *Op. Cit.*, pp. 89-92.

[450] M. Ball-Nowak, *Ernst A. Cassirer – teoria symbolu i formy symbolicznej*, [w:] *Rocznik Naukowo-Dydaktyczny*, z. 130, *Prace Filozoficzne*, 5, 1990, p. 35.

[451] It is also impossible not to mention the approach to space as a very close form of life: in the form of a soundscape. *Cf.* R. Murray-Schafer, *Our Sonic Environment and The Soundscape the Tuning of the World*, Rochester, Vermont, 1977. Katarzyna Szymańska-Stułka draws attention to the potential of environmental psychology as a research perspective, thanks to which it is possible to determine the degree of environmental impact on human life and action, including the mutual relations of artists and space – interdependence and mutual impact. Such a space is not only (1) location in a specific place, but also (2) social and cultural environment (producing norms, values and practices). Hence, it is necessary to distinguish (1) personal space, (2) territorialization: a pattern of behavior and experiences in relation to personal space, (3) the degree of density: the subjective perception of space. *Cf.* K. Szymańska-Stułka, *Muzyka a środowisko na przykładzie wybranych kompozycji Aleksandra Kościowa*, [in:] *Aspekty muzyki*, t. 9, 2019; K. Szymańska-Stułka, *Przestrzeń jako źródło strategii kompozytorskich*, Warszawa, 2020. Skórzyńska, on the other hand, draws attention to more ontological shapes of space: (1) Heideggerian forest clearing: space oriented towards the understanding of being, (2) field of possibilities (in the Bourdierian sense): determining what actions of actors are possible to undertake; (3) *plenum*: rhizomatic discursive forums or agonic spaces (4) limited domains/realms: orientation of practices towards the goal, the way of dealing with the "topic". *NB* Here, too, there is a statement about the "temporality of the field", so also for philosophers or cultural experts space remains a dimension coiled in time. *Cf.* A. Skórzyńska, *Op. Cit.* The mentioned research perspectives, being on the one hand "outside the work", can show how the "internal" reality is shaped in the work. These are not just "ornamental" additions to the study of sound gestures, but methods of understanding how gestures work as *Prâxis*, including their understanding and formation, the possibilities of their technical functioning at a given time (just as the technical development of pianos illuminates the development of Beethoven's piano sonatas), and then they can certainly enlighten the issues of gestures as communicative phenomena and universals. They are certainly a promising complement to the integral analysis of the work.

[452] *Cf.* M. Kędziora, *Muzyka w czasie. Czas w muzyce* [unpublished work].

According to Bielawski's concept, everyone is entitled to a different type of space. Between these categories, transformations were implied.

The musical (performing) gesture is thus transformed in two ways – by means of two transformers: (1) through instrumentalization using the instrument's interface into sound structures, and (2) through a bipolar process of "freezing" and "unfreezing" using the notation of the musical structure recorded in the score.

In my opinion, due to the reading of a piece of music both in the light of the understanding of Ingarden, but also of Kreidler or Lehmann, but also in the light of knowledge about gestures and their nature, this transformational type in general is sustainable, although it is too narrow in understanding, reflecting only some part of the truth. The diagrammatic character of the score and its bureaucratic character **are not a necessary** condition for the existence (freezing, unfreezing) of gestures, nor their strength – often (as revealed by transcriptions into Western notation of works created in the oral-performative tradition, the tradition of another notation, or a different musical culture in general) they will even weaken or hide their essence (e.g. transcription only of pitch-rhythmic-dynamic-agogic-articulatory properties of music The Quebec Inuit would not be able to reproduce the movement and expressive properties of gestural formations.) **The search for a suitable "vessel", a carrier of full transmission of gestural information, resulting from the above-described revaluation, is an urgent need.**
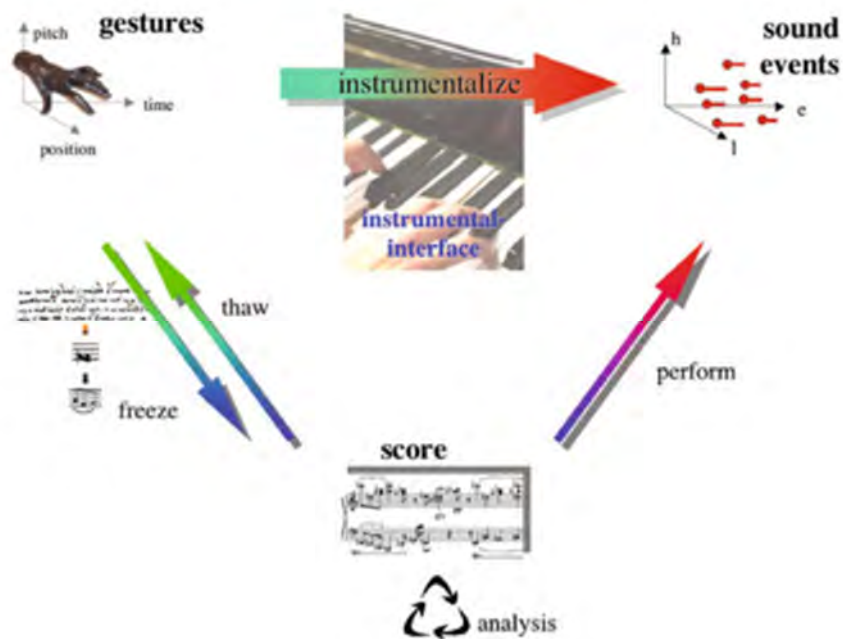
Graph 60. The triangle of transformation cited by G. Mazzola (triangle of the western type of musical performance).[453]

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[453] G. Mazzola (ed.), *Op. Cit.*, p. 900.

3.6. Gesture functions

According to Hatten, the analysis and interpretation of gestures results from the search for their function in the grammatical system of the work. Godøy argues similarly, although the basis of the study is reactions, embodied cognition rooted in the grammatical system of perception. Capturing these relations illuminates (*cognitio claro*) the variety of ways of perceiving and understanding. It seems that by capturing the subject and space of the gesture, it is impossible not to grasp their functions, hierarchy or mental images that they cause – then correct understanding remains distorted (*cognitio oscura*) regardless of whether individual perception is focused on searching for meanings (*cogitans symbolicum*) or receiving sensory experiences (*cogitans intuitive*). Smalley wrote very clearly about the nature of gesture functions, their contextual variability and embedding in the current (not to say temporary) perception of a musical work (for gesture and texture as a function): [454]

(1) assigned functions result from intuitive expectations of psychological time (dramaturgy);

(2) the assignment of a function is a process: it is subject to constant revision until the end of the work (due to the temporal linearity of the perception of the musical work);

(3) Ambiguity in the assignment of functions may occur due to context (especially when superimposing processes or movement);

(4) One cannot draw a clear time barriers for transitions between function types.

The assumption is therefore fluid functional contextuality. Cassirer will even say that art as a zone of pure forms, not experiences, is filled with the most vital forces of passion, but their nature, meaning and meaning is different (or transformed) – it is subjective to those existing in reality (objective). [455]

The fundamental question therefore concerns the distinction between functional classes and levels, useful for a broad understanding of gesture, as elements of a uniform basis that would keep different understandings in check, transcending methodological differences. Functions are distinguished due to the ratio of morphology and perception of gestures to four areas, which are determined by four basic understandings of gestures:

(1) **somatic**: attitude to bodily activities, sensory experiences;

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[454] D. Smalley, *Spectromorphology: Explaining...*, *Op. Cit.*, p. 115.
[455] S. Raube, *Sztuka jako symboliczna interpretacja świata w filozofii Cassirera*, [in:] *IDEA – Studia nad strukturą i rozwojem pojęć filozoficznych*, XXVII, Białystok, 2015, pp. 107, 109.

(2) **semiotic** (linguistic): relation to carriers of meaning;

(3) **cultural**: attitude to codified symbolism;

(4) **abstract, "control"**: relation to numbers and abstract formulas, computational systems, interactive systems (e.g. movement as input or output), but also gesture as any action through which a person informs or transforms the immediate environment, including manipulative gestures (to generate sound).

The assumption that musical gestures, even abstract ones, belong to the world and semiotic processes is a very popular approach (Mazzola, Hatten, Tagg, Adorno) well grasped also in the thought of Cassirer and other philosophers, aestheticians, with the skillful paralleling of linguistic phenomena and implementation to musical phenomena *par excellence*.

The distinction of functions and their levels is necessary so that the communicative value of the gesture does not become just a conceptual bag containing anything, but continues to retain its explanatory power of phenomena. Later in this chapter, I present several proposals for distinguishing function functors.

3.6.1. Gesture and texture

Smalley's distinction of functions *into* two opposing spectromorphologies – (1) gesture and (2) texture results from the relation to the somatic area. Without wishing to duplicate the content described earlier (chapter 2.6), I must mention that the figure-background, object-shadow, etc. relation can be found both in *Gestalt* psychology and in Bregman's analysis of the auditory scene, where it becomes a major problem.

I have already written about two types of functions – gesture and texture in this text, along with a fairly detailed explanation of the consequences of adopting this way of thinking (commentary at the end of chapter 1.3.3.). The examples cited there illustrate well the practical applications in the work *visibilium et invisibilium*.

3.6.2. Signal and symbol

Cassirer, leaning over the gestures, quotes an ancient paremia: a*rs simia naturae – art is a monkey of nature*[456]. However, this paremic is denied, because in his idealistic position, the artist creates and transfigures the represented reality and the world of perception, while art is a form of "freezing" reality and its intensity, a revelation of inner life, creating signs that preserve its concreteness and individual diversity. In this, according to Cassirer, music is to differ from the pragmatic (intellectual-scientific) order, which produces general, abstract signs – signs among signs – using classification, procedure. [457] Among the signs distinguishes Cassirer signals and symbols:[458]

Signal	Symbol
Conditioned reflex	Functional (purposeful, cognitive)
Part of the physical world, material existence	The human world of content
Imaginary Practice (-> Embodied Cognition)	Represents symbols
Sensual	Mental, organizes experiences
Specific	Abstract
Stimulus-reaction	Stimulus-symbol-reaction

Graph 61. Cassirer signal and symbol features.

The signal is distinguished by its relation to the somatic area, and the symbol to the linguistic, cultural and abstract areas. For Cassirer, gesture (in the colloquial sense) is a symbol, so he says that when we perceive it, we do not think about the thing *, but we think the thing*. Cassirerian symbols are abstracted from their original context: on the one hand, contextually separated (separation of property from the object), on the other, metaphorically deinstrumentalized (detached properties from immediate needs). Hence, depending on the relation to the source context, their functions are distinguished:[459]

Expression (*Ausdruck*)	Representation (*Darstellung*)	Pure meaning (*reine Bedeutung*)
Image	Word	Orientation
Facial expressions	Analogy	Symbolism
Me-You Communication	You-it Communication	it-To-it communication (symbol of symbol)
Direct convergence	Release from the immediacy of the material medium	Pure symbolism
In abstracto	Transfer to another situation (in forms) – metaphorical	Between semiotic systems of different provenance
Abstracted from context	Following the "pregnant meaning"	Creates its own contexts

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[456] *Ibid.*, p. 105.
[457] *Ibid.*, p. 109.
[458] E. Cassirer, *Esej o człowieku, Op. Cit.*, p. 75 and next.
[459] P. Parszutowicz, *Op. Cit.*, p. 98 and next.

Expression (*Ausdruck*)	Representation (*Darstellung*)	Pure meaning (*reine Bedeutung*)
Convergence with the senses	Analogy	The knowable object is shaped by symbols,
Idem per idem Whole indivisible	*Pars pro toto* The discursiveness of cognition	Does not represent
Mythical thinking, the form of topoi	Formation of a system (dictionary, culture) of dependent symbols in perception	It builds an autonomous meaning, with a specific function in the system

Graph 62. Features of expression, representation and pure meaning according to Cassirer.

Cassirer's triad of functions thus corresponds to the smooth transition of relations from the areas of language and culture to abstraction. Reading both signal and sign theory, with its assigned functions, would give full reference to all four understandings of gesture (Chapter 3.1.5).

In the piece *visibilium et invisibilium,* one can distinguish a number of gestures fulfilling the functions described by Cassirer. For the sake of readability, I limit the number to the most representative (in my opinion) examples.

Signal: (1) bells (part I) – on the one hand, a reflex, signaling an important moment (exceptional, one-off, unique), on the other hand, a cultural reflex of a symbolic or even ritual-religiously oriented character (turning on the light and ringing bells – association with illumination during the Christian Easter Vigil or the Christian moment of consecration). (2) *Ritardando* gestures as a signal of deceleration, stopping.

The gesture of "friction" realizes both the qualities of the signal and the symbol: expression, representation, pure meaning (quotations). It is therefore a form of semiosis (surrogacy) in which the same gesture performs different functions.

(1) as a Signal – e.g. as stage indicators (Part I, weave points). The distinction occurs due to the direct perceptual impact (grammar of listening) of the "friction" sample;

(2) as a Symbol:

(a) as Expression – a mutilated gesture, e.g. a video stripped of the "audial" layer, which is "reinterpreted" by the use of quotations (Part III), creates an opportunity for direct convergence (promise) that does not come true, does not occur – various forms of analogies and symbols follow;

(b) as a Representation, e.g. gestures-references (quotations Part I, Part III), weave points (Part I);

(c) as Pure Meaning – the audio-playback (Part III) is based on the transformation of the friction sample, e.g. shaped as a quasi-quote from *Aphasia* Zielińska. On the one hand, it is a form of representation (interpretative connection with the gesture of friction), but on the other hand, the transformation has reached so far that the perceptual reading may not come true (third-degree surrogacy). The second example is the stage indicators (part I) – determining the structuring of the form into larger, closed particles. The distinction of stage indicators as pure meaning occurs due to the systemic impact (compositional grammar).

Conclusion: The typology of Cassirer signs completes, explains the process of surrogacy in Smalley and its rotational functions. It is a good scheme of the extent to which a sound gesture can be perceptually associated with an experience, e.g. a non-musical phenomenon. The history of music shows that the direct impact of symbol-expression was relatively bracketed (paradigm change with "new compositional practices" or so-called "relational music"), but the representation and pure meaning remain. A good example is Brahms' "absolute" music (e.g. the *Symphony no. 4*) – the concept of quotations as illumination of content without resorting to "expression" and "representation". Performing several functions at the same time, e.g. signal and symbol-pure meaning, is proof that grammar "listened to" and grammar "compositional" are different sides of the same coin.

3.6.3. Idioms and constructivist hierarchy

The following calculations refer primarily to semiotic and cultural areas – focusing on the categories of idiomatics (style) and "architecture" (structural structure) of the work. Hatten, studying the music of the great classics and early Romanticism, structured an enumerative proposal for distinguishing classes and gesture functions:[460]

(1) **Stylistic gestures**: conventional energetic shapings through time.
   a. **"gravitational lackground field"**: tonality, metre, etc.,
   b. **"topos"**: occurrence in ritual and conventional genres (dances, marches),
   c. **"interpretative convention", "performance practice"**: conventions for interpreting phenomena such as articulation, accent, dynamics, time, synchronization,

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[460] R. S. Hatten, *Interpreting Musical Gestures...*, *Op. Cit*., pp. 136-137.

d. **"stylistic type":** determining whether there is a reference to an existing style in a oeuvre or whether it creates a new or existing subtype;

(2) **Strategic** gestures (style tokens):

a. **spontaneous**: mapping an expressive gesture into sounding forms. It can be thematic,

b. **thematic:** transformational changes, can be understood as variational, motivical development,

c. **dialogical:** gestures between different types of representations (agencies) or within one,

d. **rhetorical:** articulated to denote non-musical movement or meaning (discourse, flow):

- Used to mark stages, genres of an expressive type,

- Contain sudden and unforeseen pauses, changes or shifts,

- it can emphasize tonal reversals (opposite) or textural "undercuttings",

- It can mark the shift in the level of discourse,

e. **Tropes**: as components of a higher-order gesture.

In the piece *visibilium et invisibilium one can* distinguish a number of gestures that perform parallel functions to those described by Hatten. The use of the appropriate Hatten typology results from the fact that the gestures he describes refer to the "**conventional** formation of energy in time". Since the form of my work is free – in the sense that it is determined dramaturgically by me (even if based on objectified elements), and not determined strictly by a conventional scheme (e.g. *aria da capo*, *allegro sonata form*[461] with all architectural, tonal, expressive and expressive consequences resulting from these types of structures), analysing gestures from this angle does not make much sense. However, I think that a chance to preserve the sense of Hatten's proposal is a broad, broadening treatment of it, enabling us to grasp how gestures make up their own compositional idiom, as well as how dramaturgy is built through the hierarchy of gestures.

(1) Idioms:

a. "Gravitational lackground field", for example:

- the use as *a cantus firmus* or rather tonal centers of successive sounds of the melodic structure from *Credo III* in part II. I and IV (including the quality of tonal tensions resulting from

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[461] This state of affairs does not fundamentally prevent us from drawing more general parallels between the old forms and the form adopted in my work.

changes in tonal centers in accordance with the progress of the melody – e.g. change of the center by a major second or by a minor third),

- "gravity" resulting from the types and directions of motion in given sections (*cf.* table from page 65), especially acceleration-deceleration – both the form, specific gestures of *ritardando/accelerando* in the audio layer, but also the visual layers (performative gestures, movement of performers, light, video),

b. "genre convention", for example:

- temporary "precipitation" of idioms of species, especially ritual: bells and light (part I), whispered quotation from *the Bhagavad Gita* (Part VI),

- gestures-references as a reminder of creative idiomatics different from my own,

c. "interpretative convention" by way of example:

- the theoretically produced gesture convention (as a complement to, for example, the theory of relational music) explains the practically understood procedures of compositional grammar,

- extended performance techniques (e.g. trill a la Saariaho): despite the rather careful description of the implementation of the techniques in my intention, the "new virtuosity" of the performer is actually determining,[462]

d. "stylistic type" (as very general sources of inspiration, rather than a specific multiplication of style) on the example:

- "Glitched", "dirty" spectralism – e.g. Adámek, Bedrossian, Fausto Romitelli, Iannotta, Lisa Streich,

- "old" and "romantic" playwrights (though not necessarily forms), quotation and gestures-references – Adámek, Filidei, Georg Friedrich Haas, Brahms, Bach,

- Objectors – Luigi Russolo, Adamek, Filidei, Błażejczyk, Zielińska

- Dynamistatics – Luigi Nono, Grisey, Lang, Jonathan Harvey,

- Instrumental musique concrète – Lachenmann, Panayottis Kokoras,

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[462] This is where the paradox of explanation prefaces to new pieces is revealed: for performers unfamiliar with contemporary performance, even a detailed description is often too little help (oral-performative transmission is necessary, often in interaction with the composer). For a performer skillful, if not even specializing in the performance of new music, such a description will be completely unnecessary.

- "French type" of electronic party – "organic", "unifying", "fused" shaping in relation to acoustic parts;

(2) Constructivist hierarchy on the example of the gesture of striking (and its semioses):

a. spontaneous: the *Heurēkamen* moment – the assumption of translating the gesture of striking into visual and audio forms. As Kreidler noted, conceptualization within the score paradigm is more bureaucratic than spontaneous, so I leave it here, without elaboration,[463]

b. thematic: e.g. p. 127 (three versions),

c. dialogical: different types of representations (resulting from different levels of semiosis), e.g. p. 47 (quote and my gesture),

d. rhetorical: e.g. part II. And as a rhetorical attempt to represent the "striking" of sound from whip by paralleling the striking of light from a match,

e. Tropes: Figure-background (*cf.* p. 62-64 of this work).

The second linguistic and cultural methodology of function (enriched with an abstract-somatic element), aimed at establishing a typology of musical signs (and thus pragmatically semiotic) was coined by Tagg on the basis of his experience with sound in film:[464],[465]

(1) **anaphones: the** use (homologation) of existing models to create their musical representations (analogies) in the form of sound structures:
   a. **sonic**: perceptible similarity to paramusical sound,
   b. **kinetic or spatial**: perceptible similarity to paramusical movement: human, animalistic or other (perceived in various dimensions, including physical) and paramusical space,
   c. **sensory**: perceptible similarity to paramusical sensory senses (etc. touch),
   d. **composite**: similarity in the use of certain perceptual modalities,
   e. **social**: similarity to the size and type of (social) group;

(2) **diatactic (indicators of construction, direction, expediency):**

[463] *Cf.* p. 120 of this work.
[464] P. Tagg, *Op. Cit.*, p. 485 and d; *Cf.* with the original text: P. Tagg, *Towards a Sign Typology of Music*, [in:] R. Dalmonte, M. Baroni (eds.), *Secondo convegno europeo di analisi musicale*, Trento, 1992, pp. 369-378.
[465] A similar postulate is expressed by Chion when he writes about sound indicators of materialization (*Materializing Sound Indices*): "denotes aspects of a given sound that make felt more or less accurately the material nature of its source and the concrete history of its emission: its solid, gaseous or liquid nature; its material consistency; the accidetal features that arise during its unfolding, and so forth. The materializing sound indices of a sound can be greater or fewer In number and in limited cases, a sound can have none." [in:] M. Chion, *Sound an Acoulogical Treatise,* transl. J. A. Steintrager, Durham, 2016, p. 267.

a. **episodic marker:** a short, one-way process that emphasizes the order or affinity of the meaning of musical events,

b. **episodic determinant:** a structural element determining the division of music into distinctive sections and sections,

c. **diatactics:** general bonding of sections into a single process;

(3) Stylistic designation:

a. **Synecdoche of genre**: *pars pro toto* a reference to a "foreign" musical style by using individual components to complement the mental cultural context ("adduce") of this style in the perception of the recipient,

b. **Style indicator**: *Idem per idem* aspects of musical structure that are either fixed or considered typical of the "native" musical style in question.

In the piece *visibilium et invisibilium*, a number of gestures can be distinguished that fulfill the functions described by Tagg. For the sake of readability, I limit the number to the most representative (in my opinion) examples.

(1) anaphones:

- sonic (striking a match – I avoid literality, but there is, for example, the last gesture of the I part),

- kinetic (for movement – e.g. striking matches, p. 62-64),

- sensory (I part, granules, similarity to rough friction texture),

- composite (illusion, acceleration, deceleration, dynamistatic, etc.),

- social (presence, absence – operating with *tacetos*, solo vs tutti, figure-background),

(2) constructivist hierarchy:

- Episodic markers (p. 62-64)

- episodic determinant (p. 62-64) – changes in tonal centers (Part I)

- Diatactics – dynamistatics (p. 62-64)

(3) idioms

- Synecdoche of genre: quotations, reference to church style (bells)

- style indicator: postspectral harmonics, concrete and concrete instrumental music,

3.6.4. Generation, coding, sound response and symbolic functions

The evolution of Godøy and Leman's views towards the gravitation towards the somatic area of gesture understanding also resulted in the explication of functional levels modeled on the previously listed functions in Schaeffer's typology:[466]

(1) producing sound (performer gesture on the instrument interface): actual action, effective excitation and modification;

(2) encoding sound (establishing a communication channel): abstract action;

(3) arising in response to sound (gestures of the performer other than those producing – synchronizing, expressive) – accidental, performative actions:

    a. supporting sound (support, phrasing, learned): auxiliary to the production process,

    b. Accompanying gestures: they follow, track or imitate the sound.

As would follow from the interpretation of this juxtaposition, semiotic, cultural and abstract areas can be understood in the function of sound coding, which the authors do not pay too much attention to. However, it should be appreciated that in their texts they cite the communicative theory of symbolic gesture functions of the language of Zhao and McNeil (derived from the work of Paul Ekman, a specialist in gesticulation),[467] which provides a good basis for parallels with the gestures of a musical work:[468]

(1) Gestures act as carriers of meaning in interaction:

    a. iconically: they represent the material features of the object (shape, spatial range). They refer to specific objects and events,

    b. Metaphorically: they represent abstract features of the object. They refer to concepts and relations,

    c. accentuation: beats (along with saying words). They emphasize continuity or discontinuity, mark (accentuate),

    d. Deiktic: indicating a point in space. They refer to orientation and reorientation,

    e. emblematically: stereotypical patterns with an agreed meaning;

(2) perform a control function within the elements of the system (e.g. calculation);

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[466] R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, pp. 14 and d.
[467] Hatten also evokes this concept, but emphasizes their gestural, directly bodily character (as idiosyncratic movements of the limbs of the body accompanying new movements – perceived by McNeil not as a repetition of the content contained in speech, but as its complement). *Cf.* R. S. Hatten, *Interpreting Musical Gestures...*, *Op. Cit.*, p. 105.
[468] R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, pp. 23-24.

(3) metaphor (they project physical movement due to established cultural perceptions).

In the piece *visibilium et invisibilium* , a number of gestures can be distinguished that fulfill the functions described by Godøy-Leman and Zhao-McNeil. For the sake of readability, I limit the number to the most representative (in my opinion) examples.

(1) sound-producing gestures – the use of visual aspects of performance activities (e.g. movement of pipes in the air, objectophones, attracting attention, etc.)

(2) Gestures encoding sound (establishing a communication channel):

(a) as meaning in the interaction:

- iconic (I part, mm. 90 and next)

- metaphorical (higher-level compositions – e.g. releasing form of Part I, quasi-quotation from Zielińskas *Aphasia*)

- accentuation (weave gestures, I part)

- deictic (dispositions of performance means – orchestra-amateur ensemble-audio and video playback

- emblematic (sinusoidal tones, quotations)

(b) control within the element of the system (e.g. grammatical system of the work), any stage indicators, etc. , elements of "speculation", "generativity".

 (3) gestures arising in response to sound – the proposed choreographic part, possible reflexes of the audience

3.6.5. In the triggers of effective surprise

Calculations of functions may increase depending on the erudite "virtuosity" of the researcher. However, it is also worth mentioning the very practical aspects of describing the functional levels of gestures. Such an example is the Brunerian effective surprise mentioned above.

When building the grammar of the work, the composer refers to the grammars of listening – certain pre-cultural and directly cultural rules of orientation of perception. However, not infrequently, this is not enough. The composer not only uses already established syntaxes (e.g. harmonic, contrapuntal and formal thinking schemes), he must somehow take on the role of a "teacher" and support perception, "teach" the recipient the grammar built in his work[469], including the use of gestures. The basic method resulting from the grammar of listening is the situation of repetition and the situation of difference in relation to which mental reduction tests take place. However, I believe that especially with the development of the art of the "new turn", the development of conceptualization (the very discovery of the concept by the viewer as a moment of effective surprise) and the need to organize more and more complex contextual "weaves", it is necessary for the composer to take into account the processes of theemonic, supporting on the one hand the memory of the recipient, and on the other suggesting new approaches to the puzzle, and thus a proposal of new knowledge about the phenomenon.

The proposed open distinction of types of Brunerian triggers of effective surprise was constructed by Jari Metsämuuronen and Pekka Räsänen[470] in the context of teaching. This concept can be useful in that a parallel is drawn with it in the functional distinctions of gesture juxtapositions, especially in the case of works that we can say are relational. In principle, all triggers can be divided into:

> (1) cognitive-lingual;
> (2) constructivist:
>> a. based on teaching techniques,
>> b. narration,
>> c. logical-scientific,
>> d. retorical;
> (3) fonological.

However, after a more careful review, ultimately all of these triggers belong to the construction order – interestingly, they coincide with the artistic means known from the Polish language (these in turn coincide with musical rhetorical figures) – they focus on the problem of qualitatively clear, rhetorical and architectural "delivery" of ideas – resulting in the

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[469] This is what the field of counterpoint deals with in its scope – composing the theme in such a way that on the one hand it is expressive (characteristic), and on the other hand it can be repeated by the recipient with a voice. If the rules of counterpoint can be reduced not only to practical ways of obtaining hedonistically beautiful melodies (in relation to the other layers in a harmonious, "natural" way), but above all to units prepared in such a way that they are easily traceable and observable in the dramaturgy of the work, it can be said that interest in mnemonic techniques and pedagogy may result in increasing the effectiveness of the composer as an architect of the work. To Construct *Ear-worms* It is also an art.

[470] J. Metsämuuronen, P. Räsänen, *Op. Cit.*

maintenance ofthe idea focus in the space of perception of the recipient, the ability to persuade interest, facilitate the test of repetitions and differences, etc. Some of these triggers are possible to use *directly*, others require analogy (if for some reason you do not want to use *lógosu*).

Trigger type	Implementation example
"Cognitive-linguistic memory triggers	– Doubles ("and," "or") ("X and Y"; "X or Y") – Strict comparison ("compare" or "the same way") ("in the same way, X is Y") Strict comparative ("better than") ("X is better than Y") – Strict differentiation ("differentiate" or "separate") ("separate X from Y!") – Expression for opposite ("but") ("X is [like] A but Y is [like] B") – Nominal counterparts ("body - cloth," "receive - give") – Extreme counterparts ("good - bad," "sheep-wolf") – Nominal ordering ("big - small") – Comparative ordering ("bigger - smaller") – Superlative ordering ("biggest - smallest") – Extreme values ("all," "always," "never," "in the end" or "finally")
Strict constructivist mnemonic triggers	– Spiral teaching (enlarging the material in different rounds) – Logical-scientific constructivist mnemonic triggers (including logos) – Rhetoric-constructivist mnemonic triggers (ethos and pathos) – Connecting teaching to something already known ("as you know...") – Connecting teaching to common concepts (e.g., ingredients, traditions) Structural repetition (repeating word or idea within the teaching) – Repetition of the material (teaching the same matter again) – Repeated testing of the learnt material
Narrative-constructivist mnemonic triggers	– Metaphors ("X is Y") – Simile ("X is like Y") or ("X is as Y") – Visual image – Plotted story – Narrative/parable/allegory – Triple repetitions ("three paths to go") – Gradual increase or decrease ("1-2-3","3-2-1")
Logical-scientific constructivist mnemonic triggers (including *lógos*)	– Light argument ("because" or "for") ("X is Y because of A") – Conclusion ("then," "thus," "hence," "so," "therefore") ("hence, X is Y") – Condition ("if," "unless") ("if X then Y" or "unless X (no) Y") – Reference to hard-fact data – Logical argument (deductive, inductive, abductive, and statistical arguments) – Logical order (in teaching and in the material)

Trigger type	Implementation example
Rhetorical-constructivist mnemonic triggers (ethos[471] and pathos[472])	– Raising the value or dignity (of the teacher or the study material) Showing emotions – Evoking positive emotions – Evoking negative emotions – Humor (incl. anecdotes, jokes, puns, satire) – Hyperbole – Activating the audience ("see!," "listen!," "be aware!") – Rhetorical question ("isn't it so?") – Direct address to the audience ("you!") – Collective address to the audience ("you all!") – Playing with words – Aphorisms and proverbs – Attaching more weight to an important matter ("mark my words!"; "remark!") – Attaching more weight to a saying ("surely, I say") – Paradoxical idea – Idea beyond a common sense – Peculiar ideas
Phonological mnemonic triggers	– Rhymes – Rhythms – Singing".

Graph 63. Cognitive, constructivist and rhetorical mnemonic triggers according to Metsämuuronen and Räsänen.[473]

3.6.6. Gesture feature highlighting issues

The proposed conventions for reading the functional levels of gestures in the work, as one can see, concern various research areas. I do not get the impression that it is possible to propose a uniform dictionary of functions due to the complexity surrounding relations with both the performer and the recipient, their perception, which may result in a variety of attitudes and methodologies. It can be noticed, however, that the accumulation of distinctions around issues such as artistic means (e.g. anaphones), rhetoric (connection with *lógos*), construction (orientation in form, process), idiomatics (style) is very visible. The functions remain in a continuous dialectic between cultural reflexes and psychophysical reflexes. They allow you to capture hierarchical levels more easily. The fact that function dictionaries cannot be closed is evidenced by the inadequacies of functional distinctions, which can be demonstrated by several examples:

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[471] ἦθος [ēthos].
[472] πάθος [páthos].
[473] Ibid.

(1) from my perspective, Godøy and Lemann's concept, supplemented by the theory of Zhao and McNeil, exceeds some shortcomings of Hatten and Tagg as too narrow (casuistic) classifications, or even Cassirer as too broad (universal) classifications and requiring the creation of a detailed classification. Obviously, this proposal is complemented by the communicative categories of Zhao and McNeil, as schematically the most capacious, and even reading by applying typologies of Tagg or Hatten. Only a complementary reading of these categorizations allows to specify different levels of gestures according to functions, their ordering and the application of hierarchy;

(2) Godøy and Lemann do not take into account that there may be the opposite situation than they describe, that is, that the sound gesture does not have to be primary to the performative gesture. A situation that can be dealt with, for example, in relational music, when in a musical work it is sound gestures that will imitate performative gestures, arise in response to them, etc.;

(3) the problem of space (Zhao reads space in semiotic-cultural categories, and in control and somatic categories), the lack of specified spatial functions. In principle, it is necessary not only to take into account the viewer, but also to take into account space (in Bielawski's sense) to grasp the nature of the gesture *in concreto*. Yes, space is present (as a space of symbolic thought or deictic pointing here-there), but intuitively one could distinguish detailed classes. This is where Roy's, Smalley's, etc. proposals come to the rescue.

3.7. Gesture test methods

Based on the subject, space and functions of the gesture, as well as the knowledge of its construction and its effects in reception, it remains to indicate the methodology of examining gestures in *concreto in the* reality presented by a given work. Basically, this study allows to show the intellectual virtuosity of the analyst and interpreter – due to the multimodal nature of gesture, it can be carried out from different points of view: semiotics (especially language sciences), thanks to which multiple meanings are generated, physics, instrument studies and acoustics, biomechanics and cognitive science, medicine, especially psychiatry, physiology, human motor control, auditory and visual perception, musical performance and dance, music theory, music technology, *sound design*, robotics and *HCI, CAC*, aesthetics, ethnomusicology, cultural studies, sociology and other sciences.

The ordering of this tangle of possibilities can take place according to Godøy and Leman's proposal:[474]

(1) "Consider observation and/or introspection;

(2) consider qualitative and/or quantitative methods;

(3) consider motion capture;

(4) consider processing and representation;

(5) consider simulation and/or animation;

(6) Consider annotation and interpretation."

Another type of consideration is proposed by Christophe Ramstein:[475]

(1) phenomenological approach: descriptive analysis of properties, especially motion, space and periodicity;

(2) functional approach: indicating functions in a specific context;

(3) Internal approach: conditions for making a gesture from the musician's point of view.

According to him, the determination of functions is only one of the elements thanks to which it is possible to build a research system of gesture topology (as general schemes thanks to which it will be possible to practically design gestural input devices in the *HCI* sonification system).[476]

Hence, one can get the impression that the study of gestures hangs between the production of typologies and practical applications, and the search for unifying platforms.

3.8. Gesture as *prâxis*

Accepting at the very beginning the perspective of understanding gestures as weaves, i.e. juxtapositions of ontic elements of phenomena with sets of practices generating multiplying transdisciplinary research proposals, it is impossible to focus on gesture as a theoretical paradigm (not so much as a form of shortcut, but as a form of access to a certain perspective of perceiving reality, both in the process of constituting the work and its

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[474] R. I. Godøy, M. Leman (eds.), *Musical Gestures...*, *Op. Cit.*, pp. 28-30.
[475] *Cf.* C. Cadoz, M. Wanderley, *Gesture music...*, *Op. Cit.*, p. 74.
[476] *Ibid.*, p. 79.

description, interpretation), not to refer to it as simply a practice, a set of actual actions occurring in a perceptible reality (*prâxis*, in this case composers and music theorists). [477]

I don't think, as I have already expressed, that gesture is a practical turn in music. On the contrary – it seems to be a well-established practice (perhaps of a universal nature, although generating disputes in the conceptual field). The gesture is, in my opinion, a platform integrating the field of practice and the field of theory – equal rights are taken on the one hand oriented to embodied cognition, based on both *τέχνη [technē]* and *ἐμπειρίā [empeiríā]* or *gnōsis*, but also situated cognition, based on *doxa*, or abstract cognition, based on *epistēmē*[478]. Besides, Pierre Bourdieu's theorem about the necessary moment of theoretical withdrawal at the moment of attempting to grasp the perceived reality in a coherent and logically coherent way is popular. [479] The method of verifying whether a gesture can be understood as *prâxis* is to compare the statements of Skórzyńska's approach to practice (as one of the forms of new ontologies) with the general regularities concerning gesture observed by me.

Prâxis	Gesture
The engine, the driving force for realizing and updating the temporary arrangements of "people, artifacts, and things."	Using the example of relational music (Lehmann's approach), gesture is a method of creating this relation not only between the creator, performer, recipient, but also between artifacts (e.g. quotations, references) or things (hard reality, but also concepts). At the same time, the gesture is a temporary unit, "here and now", a moment of convolution. In this sense, gesture is certainly a form of so-called new ontology (e.g., relational ontology), in any case abstracting from the necessity **of systemic** representations.
It emerges, consolidates and disappears in time.	On the one hand, the theory of palingenesis of musical ideas confirms gesture as a well-established practice, and on the other hand, there is the issue of the formation of styles and genres (idioms). The particular form of gestures as rhetorical figures culminated in the Baroque era, after this epoch noting a "decline" in the universality of the scope of application in favor of individuality, but does this mean that in classicism, romanticism or now they are not used?
They develop thanks to specific arrangements of	The sensory-semiotic (physical-virtual) nature of

[477] Attempts to multidimensional observation of this paradigm as a diverse practice are made, for example, by a blog *Gestes, instruments, notations ... dans la création musicale des XXe et XXIe siècles* [source:] https://geste.hypotheses.org/ [accessed: 01.05.2023], or an interesting monograph by E. Tomas, T. Gorbach, H. Tellioglu, M. Kaltenbrunner (eds.), *Embodied Gestures*, *Op. Cit.*
[478] A. Skórzyńska, *Op. Cit.*, p. 52 and next.
[479] *Ibid.*, p. 67.

Prâxis	Gesture
what is material and mental.	gestures is expressed in the concept of movement-action-meaning or the formation of gestural communication due to embodied cognition, and on the other hand due to sign (symbolic) actions.
Knowledge and beliefs are not primary to practice, nor are they the culmination of them.	Gesture as a concept emerged in a kind of process in the meanders of music history, leading to the possibility of codification (Mazzola, Hatten, Godøy), yet it escapes any systematization, and compositional practice always overtakes the theoretical construct.
The articulation of practices is a process synchronous with respect to actions, and therefore timed and embodied.	Understanding gestures in history (proposals of rhetorical figures, *Klangfarbenmelodies* , etc.) has always found its realization in specific times. Varèse may have imagined the (electronic) music of the future, but was he able to foresee the epochal development of communication methods (not to mention their economic and market background) influencing the creation of gestures? The shapes and understandings of gestures necessarily depend on their times (as a mode of expression), while the essence of gestures depends on the immutable nature and human experience.
Practices cross the boundaries of cultural subsystems (or it is difficult to trace the boundaries of subsystems: symbolic, material, social) – there are practices and constellations of practices that can not be attributed to any of the known theories of systems, circulations or fields of culture.	Gestures transcend the sensual, the semiotic and the cultural. Compositional imagination and intuition have repeatedly preceded what is theoretically codified in history.
Translocation – developed in a specific context, they gain a wide range to simultaneously become outdated and disappear.	Gestures in the form proposed by Grisey (based on the cycles of human breath) find their distant reflection in the organic concept of Sciarrino's music and many of their successors. This does not mean that all gestures used refer creatively to organic cycles (etc. Furrer's kaleidoscopic gestures). Nor does it mean that Grisey and Sciarrino are the first or only such gestures to understand. Ultimately, due to the hypothesis of precultural gestures, even the most complex and directly cultural ones can be reduced to them. Nevertheless, this compositional intention is a point of reference. The hypothesis only illuminates them and gives them a new context.
Everyday character – a constant process of their occurrence, not ontic status.	The essence of gestures is that they are used by composers and theoreticians, not codified. The everyday character does not only determine the approach as a habitual and ritual activity (here, for example, as a dependence on style or referring to current problems, e.g. social,

Prâxis	Gesture
	political), but also action in the category of profession (compositional technique, compliance or not with compositional grammar, i.e. with art, *technē*). [480]At the same time, however, the gesture interferes with the ontological zone – being itself *ὄv* [*ón*], an indivisible being, it accumulates around itself concepts such as: the adoption of a preposteric reading of the work (music in music, music from music, etc.), or treating a style, a work (as Adorno says, "not only as the result of processes, but also of frozen processes themselves") as gestures must lead to the conclusion that musical gestures produce results not only practical (logical, phenomenological), but also of an ontological nature. The fact that gestures are hierarchical provides the "depth" rather than the "flatness" of this ontology. Despite this, it does not interfere with the ontic sphere, the theory of being – it does not produce strict, binding dictionaries, which confirms a very broad, even individually individual understanding.
Emergent factors – reproduction and modification of patterns, development of new meanings.	Using gestures as units of communication forces you to adapt them to communication every time. In this sense, not only gestures in specific artists differ, but also gestures within different works of one artist. Therefore, gestures are self-applied depending on the needs of communication and the contextual relations in which they appear.
Agency and conflict – on the one hand, the "order-forming" character, on the other, the generation of adversarial attitudes, competitive.	The diversity of understanding and application, on the one hand, creates the adversarial context of the use of the concept (the possibility of misunderstanding, ambiguity about designations, etc.), on the other hand, it offers a platform that is unifying, domesticating. I met with positions in which the gesture was treated concisely, event-like, and positions in which it was treated in a complex, process-oriented manner. According to some, it was such a valuable, exceptional value that it was almost impossible to apply it in a practical (descriptive) way, and sometimes it was the most ordinary, the most basic method of workshop. I omit the age-old problem of conceptual conflict between composers and music theoreticians or composers-performers in general.
Neither individual nor holistic.	Gestures, as a distinguished category, do not depend solely on a specific realization or understanding in a given composer (or even

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[480] *Ibid.*, p. 122.

Prâxis	Gesture
	within a specific work), nor are they determined solely by larger complexes of practices (group, trend, genre, style, adopted ontology). They are formed in the system of interconnected vessels.

Graph 64. Comparison of *prâxis* features according to Skórzyńska and gesture as *prâxis*.

Since gesture exhausts the characteristics of practice, it can also be examined as practice.

3.9. Useful definition of a musical gesture

Despite the radical broadening of the approach to the problem, including the re-evaluation of some of the observations expressed in my master's thesis devoted to gestures or solving some of the problems outlined at that time (distinctive and analytical), I was surprised to discover that the definition I constructed at that time is in principle valid, and still, deliberately, reconciles the divergent positions of the authors, who seem to agree that gesture includes both movement (in the material or immaterial sense), as well as some form of meaning (presemiomic, or within some system of signs).

In my opinion, a musical gesture is a **formatable system of movement (energy) in specific dimensions (spaces), which can be assigned meaning and function in relation to the structure of a musical work and is perceived as a carrier of significant (communicating) information for the recipient systematized by grammatically and contextually defined rules of meaning**[481].

The gesture has its objectively measurable (describable) substrate of a quasi-material character, it causes material (e.g. change in the arrangement of space) and immaterial effects (e.g. mental-bodily activation of the recipient – whether at the symbolic level or at the level of embodied cognitions; it is also possible to cause ontological effects).

A gesture in the musical sense has the nature of a sign (it is at least the first transformation of the original object within Peirce's semiosis, or in other words, a symbol or signal taken out of its original context), so thinking about a gesture is methodologically identical with thinking about its effects. Hence, I conclude that gesture has a phenomenological ontology, similar to the ontology of a musical work in Ingarden's approach.

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[481] *Cf.* D. Puk, *Op. Cit.*, p. 48.

The musical gesture, in order to be of purposeful effectiveness, forces us to refer to perceptual rules of meaning ("interpreter" resulting from the grammar of reception as the opposite of compositional grammar) and perceived space as a unifying platform.

Musical gestures are organized hierarchically (reductively) due to their transformative nature and the continuous production of perceptually distinguishable new units.

3.10. Musical gesture and other descriptive musical categories

Accepting the meaning of the gesture in the sense presented above causes a number of further implications, also in the nomenclatural grid. Due to the emphasis placed on structural sense, certain questions arise especially in distinguishing gesture as a category from other structuralist categories, common and present in music theory, such as motif, sentence, phrase, period, figure, figuration, rhetorical figure, shape and posture.

Motif, phrase, sentence, period (small, great) – these are the elements of the system of description of a musical work laid out by Riemann on the basis of classical works. Leaving aside the problems of this methodology (e.g. artificial attachment to symmetry as a model of "naturalness"), it should be noted that it is a hierarchical concept in which lower-order elements build higher-order elements, and at the same time allow the analysis of entire structures, depending on one another. The same applies to gesture, which, as a synthetic, multilayered and hierarchical phenomenon, also shows the possibility of studying minor component structures, remaining in relation to the morphology of the whole.

At the same time, it should be noted that gestures, as phenomena *meaning per se*, process-by-process arrange in a musical work into certain "phrases", meaningful "sequences" (understood outside Riemann's concept) and do not have their specific, fixed, single systemic sense. They also do not have their own single, systemic hierarchy. Contrary to Riemann's concept, where lower-order elements (without a specific meaning) form higher-order structures in which sense and meaning (mainly as elements signaling the affect or moment of the macroformal structure, i.e. systemic elements) is a value. Motive, phrase, sentence are therefore indicators of the stage of the process. They can be gestures, but gestures are not necessarily the other way around.

The figure is perceived as the most basic structuralist element in music, corresponding to the motif, and thus at the same time closing in on itself, creating a complete

and articulated unit. Most often it is a short progression of sounds, a repetitive structure of several notes. The figure is obviously related to the *Gestalt* theory - as a thing in itself it must have a primary character, while at the same time needing a secondary element (background). Figuration should be distinguished from a figure, rather as a textural structure that can function both in the foreground and in the background – as accompaniment. At the same time, the figure is supposed to resemble a molding (e.g. stucco moldings) in architecture: it is "open at both ends" to be infinitely repeatable, adaptable in a specific context. Figure (figuration) in early music is used to describe (1) the procedures of ornamentation a melody, and thus giving it a final and complete, and on the other hand improvised sound shape, harmonic complement (or even dissonant shape) and finally - expression; but also in church music (2) *figuraliter* music - polyphonic, concertante, "virtuosic", composer "owns", in which the composer shows his artistry as the opposite of *choraliter* music - homophonic accompaniments to chorale melodies, aimed at cooperation between professional performers and congregations, and thus constituting a limitation for the composer[482].

From this understanding arises a special type of figure – a rethoric figure – which is, on the one hand, a stylistic figure (a structure of statements about a style established and scalsified by the theory), and on the other hand, a "decoration" of the melody by giving it a semantic meaning, in accordance with the elements of the conventional system. The figure of speech differs from the figure in that it receives a given meaning and non-musical meaning, the figure has only a musical meaning, which does not prevent the figures from being arranged in structures of a higher order, which already show this meaning. The sense of rhetorical figures is not based on "decorating" or assigning them to a specific word (in vocal and instrumental music), but in the contextual shaping of entire collections of figures constituting a message.

The obvious difference (but also similarity) between the figure and the gesture is based on the fact that the gesture is a complex, multi-layered structure (and with a meaningful message for the recipient read under the rules of meaning), while the figure is one-dimensional (and in principle meaningless, except for the musical-formal sense); Despite this, they have the quality of submission to arbitrary modulation, shaping in dimensions (time and space); A gesture may have the quality of primacy or secondariness (figure or background), while a figure is always secondary (background). However, both the figure and the gesture constitute in a certain sense a "basic" element, that is, shaping the work, even if in the hierarchy of musical events of a given moment the works are not primary elements. I

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[482] W. Drabkin, [entry:] *Figure (i), (ii), (iii)*, [in:] *Music Grove Online*, *Op. Cit.*

make the distinction between gesture and rhetorical figure on the axis of fact that rhetorical figures have their conventional catalog (dictionary), while gestures have their meaning contextually (ignoring the fact of systematization aversion). Many figures of speech retain an iconic or metaphorical connection with non-musical content. Rhetorical figures are gestures, but gestures are not necessarily the other way around.

Turning to the concept **of shape** understood according to the theory of *Gestalt* psychology, it is impossible to indicate that many times in this text (also in the paragraph above) it was closely related to the gesture. It should therefore be recalled that the idea of gesture as a musical category and the theory of *Gestalt* are primarily connected by a deeply humanistic and anthropocentric approach. Among the principles, the ideas of the Gestalt school, [483] resulting from its therapeutic output, the principle of figures and grounds has penetrated music as a psychoactustic method and a structuralist concept. In the light of this concept, gestures can be read, studied and analyzed. The second important point of gestaltism's output is to indicate the need for self-expression involving emotions and the body. [484] Such implementation and perception have been strongly functioning in the music of the last 30 years, which can be explained by the interest in gesture, as a structure that equally refers to the physical and mental forces of man.

On the other hand, *Gestalt* is not the only aspect of shape in the musical sense. It is common to use phrases such as "shape", "contour" in musical analysis in relation to complicated, complex, multithreaded structures that are difficult to define within traditional methodologies (but also relatively "new", such as the Schenker analysis, in which concepts such as "prewarp", "praline", "figuration" function, but at the same time there are process intuitions, and the presence and breaking up of "decomposing" metastructures in the form of deep layers, middle and surface, etc., which brings the concept significantly closer to the concept of gesture, but within this methodology there remains space for using vague concepts for phenomena not covered by the theory, just like "shape"). Shape is therefore a rather free (and therefore non-systemic) term. However, it is impossible to get the impression that this concept is used in contrast to gesture, as an individual emphasizing a certain dynamism, and the shape is treated somewhat as a static structure (a certain form of image), if not even geometric, notational. Like **an posture**, understood as a certain static arrangement, a position of the body, stopped, frozen. With regard to the category of gesture, there is also a comparison of this type – formulated by Hatten, in which posture is

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[483] E.g. (1) good continuation, (2) closure, (3) texture segmentation, (4) similarity, (5) proximity, (6) common region, (7) connectedness, (8) parallelism, (9) symmetry, (10) figure and ground..
[484] A. Kapusta, *Gestalt pieśni. Terapeutyczny aspekt wykonań wiejskich tradycji muzycznych w opowieściach mówionych (przyczynek do badań i praktyki tekstoterapeutycznej)*, [in:] *Przegląd Biblioterapeutyczny*, t. 7, nr 1, 2017, p. 171.

understood as " gesture "under a fermata." A "frozen motion" or pose may reveal the energy and affect with which it is invested, including that required to move into the pose […]. The posture thus "reverberates" with the resonance of the implied gesture of an agent.". [485]

It is impossible not to refer to the problem of the theme, i.e. the thematism of the gesture or theme's gesturalisation. Riemann points to the theme as a fully developed structure (having its clear beginning and ending) with a primary, basic role, which is expressed by the fact that it is processed in the course of the course of the work. Through these transformations and its role in dramaturgy, its meaning, also semantic and expressive, is revealed. Even when the theme ceased to be the melodies of the major-minor system, the thematic units were even (by Schoenberg) called *Grundgestalt*, and their patterns were transformed in accordance with the classical principles – inversion, cancer, augmentation, diminution, changes in meter, etc.

Noticing these connotations, Hatten referred to the problem of the relation between the theme and the gesture, pointing out that the gesture itself can fulfill a thematic function. However, the main difference is that the development of gesture does not result only from the possibilities of compositional craft and its specific transformations, but from the development of its gestural (i.e. affective and liminal) and implied expressive meaning. Gestures, like themes, can be deduced and established their character without the need to perform, through intellectual analysis (e.g. scores). [486]

As a side note, one more element should be added to the comparison between gesture and other well-known music theories. It is executive **mannerism**. Maria Szyszkowska gave an accurate description of this phenomenon (although unfortunately treated by the author as the central axis of understanding the musical gesture):

> "A gesture can be a manifestation of the individuality of the performer. A gesture can be – it wants to be – an appeal to the viewer-listener by assuming his presence. This is done by filling the space with sound, but also, for example, by breaking the habits of recipients. A gesture can arise involuntarily, complementing the execution, and the expressiveness of the gesture is often based on such involuntariness. An expressive gesture is as often an individual gesture, resulting from the artist's own style, preferences or habits, as an element found in the work that surprises the listener, which is something between music as material and music as a deliberate organization of sound."[487]

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[485] R. S. Hatten, *Musical Gesture Lecture 2: "Embodying Sound: The Role of Semiotics", op. cit. Cit.*
[486] R. S. Hatten, *A Theory of Virtual Agency, Op. Cit.*, p. 10.
[487] M. Szyszkowska, *Op. Cit.*, p. 269. [translation after Szyszkowska done by myself].

On the one hand, therefore, it is a pose, containing in itself and through which the artist-performer can express *élan vital* what he has done, mannerism, individual style, increase expression and his interpretation. The tradition of such a gesture concerns solo musicians and is expressed whether it manifests itself in such performance activities as, for example, stopping the bow in the air and slowly removing it after a virtuoso passage, or cadence, stopping hands in the air by the pianist, Glenn Gould's case (characteristic pose and humming during playing). In this way, by hyperbolizing his normal performance gestures, the musician-soloist emphasizes, emphasizes his individualism and role as an interpreter in the work. A secondary meaning is the communication function – e.g. as a synchronization signal for the conductor or band members. Some commentators draw attention to the need to create a staffage of this type of gestures for new virtuosity (in the context of new instruments or soloist parts based on extended compositional techniques), to emphasize their virtuoso role.[488]

A similar kind of related phenomenon is the perception of certain choreographic (visual) performance values of the performance aspects of the game (e.g. the spectacular trill type) as a gesture. Some composers, such as Hans Martin, [489] propose that the musical gesture understood in this way should be used as a decoration and visual "finish" of phrases. This type of visual-choreographic gesture is used as a separate visual layer of the work, despite the fact that the structure of the work itself is *strictly* sound, e.g. visual-physical "reflection" of gestures (hitting the bodies, mouthpieces, etc.) being "shadows" of sound gestures and sound gestures as "shadows" of visual-physical gestures (opening the harpsichord) in *Concerto. Re Maggiore* by Kwieciński or the gesture of breaking the wall of sound and freezing in stillness (in the attitude of freezing) by the performers in the finale of Górecki's *Ad Matrem*.

3.11. Summary – *longue dureé* of gesture in music

From this theoretical perspective, therefore, it is possible at this point to review the *longue dureé* of the history of music, in which the idea of a musical gesture could find its germs, not to say prototypes, or even full-fledged realizations. I call them gestures, being aware that such a definition may threaten to be accused of an ahistorical attitude, or arouse nomenclatural controversy. On the other hand, the aim of this dissertation is to explain that at

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[488] This was pointed out by Wojciech Ziemowit Zych in the context of double bass clarinetists during the discussion after his paper, on 8 November 2018 during the 12. International Composers' Forum in Poznań *Kompozytor a wykonawca. Relacje, inspiracje, kreacje*.
[489] H. Martin, *Thèse au concours*, pp. 22 and 26, [unpublished work].

least the history of compositional music from Frescobaldi, or Rameau's harmonic discoveries and the accompanying broad discussion on acoustic phenomena (captured in Herder's reflection as monads) is a history of an attempt to generate synthetic sound formations, with their own mobility, purposefulness and meaning, on the one hand objectified (experience of the senses available to all people), on the other hand, subjective (own experiences, especially life, contextual, reflective), which is impossible to grasp directly when "cutting" the work into smaller particles.

These intuitions can already be found in the cradle of the Western civilizational circle, Greek music, which, although poorly known to us in sound form, is known very well theoretically (the already mentioned Plato and Aristotle), and whose most expressive core are syncretic styles and genres: dramas, in the relation of texts, performativity of actors and sounds seeking the embodiment of *kátharsis*; or *choreía*, as an example of the equalization of physical exercises, texts and sound structures, in achieving a musical-motor unity (it is not without reason *that choreía* will be defined as the triune relation of imitation of the internal states of the subject and the musical "whole"). One can also look for *choreía-like* styles as its ideological continuators through the centuries, up to modern times (military music, *Verbunkos*, work songs[490]). Finally, we should also mention the trends in which the center is to derive healing pleasure from music (calokagatically for both body and spirit): *musique d'aublement* (with ideological continuators in the form of *Farstuhlmusik*, or *Muzak*), *ambient*, *rave*, *deep listening* (Pauline Oliveros), experimental musical rituals of Cornelius Cardew, or finally *ASMR* (based on the controversial theory of universal tingling motors).

The meeting of the image of human movement and the conventionality of reading meaning can be observed in the gestural Japanese culture, the quintessence of which is *the Nō* theatre. Similarly, in Indonesian gamelan, in which the sound gesture, performative range is synonymous with position in society. Gestures in the European Middle Ages and modernity can be found in Gregorian chant, in its theory (with all the caveats made in chapter 2.8) relating to tension and relaxation of the limbs; knightly music, including *chansons* de geste, a French style celebrating great deeds, encapsulated in a full-narrative structure of gesture, music and words (and thus a kind of reinterpretation of the triune *choreía*); early polyphony by Léonin and Pérotin, Guillaume de Machaut, or Johannes Ciconia, whose fluctuations are organized by the proportion of number and the influence of accent gravitations of metric feet. The necessary context is provided by the Baroque *theatrum mundi* (including the theory of rhetorical figures, *Affektenlehre*, which to this day are treated as a synonym for musical gesture), which grew out of the mannerist *horror vacui*, and the cult of exaggeration, which is

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[490] K. Bücher, *Arbeit und Rhytmus*, Leipzig, Berlin, 1902.

expressed by the ubiquitous twisting of the body and the search for "naturalness" of forms, understood as a departure from symmetry and rationality, ubiquitous to the limit Structure. In addition, we should look at the emergence of musical theatre (including its two "opening" approaches: Maurizio Kagel and György Ligeti), or more broadly, the Lehmannian relational music emerging with the digital revolution, whose strategies of semantization, visualization and performatization (theatricalization) will primarily use the repertoire of musical gestures. It is also impossible not to include ritual music, in which ritual as a kind of theatre becomes at the same time a space for metaphysical experiences: here especially *The Great Learning* by Cornelius Cardew or *Inori* Stockhausen. I cannot fail to mention artists of such rank as Bedrossian, Zielińska, Katarzyna Taborowska or Wielecki.

It is also necessary to focus on the problem of the transformation of the external to music into the musical, i.e. the *mímēsis*, adequate expression rooted in reality, [491] often necessarily combined with the role of the sign in music in general, especially the mannerist (although present in music much earlier) postulate *imitazzione nella natura*, with its most original realizations, such as Sardinian singing *a tenore*, or throat singing of inuit, with its later adaptations (in artists of such rank as Beethoven, Gustav Mahler and Claude Debussy) and a separate and anti-mimestic understanding of the grid of concepts – such as *concetto* and *disegno*[492] – from which conceptual and conceptive music understood today will be born, i.e. a very specific form of musical idealism, which is not reduced only to iconic metaphoricity, therefore, one can look at concepts on an equal level, whether in Brahms, Anton Bruckner or Wagner, realized in the movement of sounds as musical gestures. A special case of mimesis of forms, timbres and dramaturgy of images translated into music is the oeuvre of Marta Ptaszyńska, or the mimeticism of the surrounding, contemporary world in Anna Zawadzka-Gołosz, Monika Kędziora, the *mimeticism* of technology (in the form of the roar of factories) in Maurice Ravel's famous *Boléro* and Alexandr Mosolow's *Steel Factory*.

As I have tried to show, the musical gesture is deeply founded in thinking about structure and its transformations, as in the Indian *conakol*, in which grammatical rules become determinants of the dramaturgy of the transformation of temporal structures, shaping dramaturgy through context and difference; and typologizing sound phenomena in Schaeffer's concrete music, or its reinterpretation into acoustic music, Lachenmann's concrete instrumental music. The search for synthetic sound structures as pre-patterns of gestures is also sought in the concepts of Schoenberg's *Klangfarbenmelodie*, and the

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[491] K. Moraczewski, *Muzyka jako dziedzina…, op. cit. Cit.*, p. 131.
[492] For more information: K. Stępień-Kutera, *Bieguny manieryzmu – muzyczność i retoryka*, [in:] *Res facta nova*, 9 (18), 2007.

related *Messiaen Chronochrome*, or serialism, understood by me as a systemic definition of the rules for generating unique, synthetic sound structures as a combination of many parameters. The experiment was somewhat unsuccessful (due to ignoring the grammars of listening), but his experiences gave rise to the concept of instrumental synthesis in spectrálism or some others composers working today: Bryan Ferneyhough (*new complexity*), Artur Kroschel (technique of breaking the beginning). I find concern for this synthetic sound smoothly leading to the issues of gesture in artists of such rank as Nono, Grisey, Sciarrino, Barbara Buczek.

At the same time, it is impossible not to mention the wide spectrum of creativity based on preposterity, the assumption (as in Bal's work) about the mutual "commentary" on the reality of the presented works of art through quotations, references, borrowings and mediations, shifting concepts, and thus giving rise to intertextual and surconventional creativity. In this sense, Bach's fugue from *The Musical Sacrifice on a* royal theme, a self-quotation of a surprise theme from the *Symphony no. 94* in Joseph Haydn's Aria of *the Happy Peasant* from *Spring* (4 *Seasons*), self-quotation from the song *O Tod, wie bitter bist du* and a number of other quotes and references from other artists in *Brahsm's Symphony no. 4*, *Ursatz* in the style of Bach's 2-voice invention composed by Mykietyn to the purpose of *3 for 13*, or imitation of hip-hop style in *Symphony no. 3* of the same artist are simply gestures (although here the synthesis of the material results from the very fact of **integral** citation, transferring current meanings there, and through the contexts of the work creating new meanings). Memories are also required by: Szymański, Adámek, Kwieciński, Filidei, Harvey.

Finally, it is impossible not to mention the spatial embodiment of gestures, already present in the sound circulating in synagogue dialogical techniques, spatial trajectories of the Venetian school; creating spatial imitations in Giacomo Carissimi's works; or expressive spatiality in Bach's *Matthäus-Passion* BWV 244; also reinterpreted in the opera *da lontano* by Romantics, as well as by Krzysztof Penderecki; to end with punctuality of Anton Webern. The spatial review should be closed with a memory of completely contemporary and completely complex concepts of electroacoustic ambisonic works or their acoustic implementation in the concept of *Klangraumenmelodie* of Zych. A completely new quality of gestures is ensured by the use of the *CAC* paradigm.

In order to complete the picture, one should of course also indicate the psychological form or chain forms in Lutosławski's works; the minimalist or reductionist curling of dramaturgy "inward" in Górecki, Reich or Ustvolskaya (in the latter it is even revealed by the control of the performer's outfit); Zygmunt Krauze's unist, almost inconceivable processes of

movements and durations (including the rediscovery of the joy of the spontaneity of creation[493]), a clear isolation of the listening "you" (known by name, surname and the reason for pointing the composer's finger) in the famous performative Haydn's *Symphony no. 45 in F sharp minor "Abschieds-Symphonie";* the ability to transform almost (auto)erotic mood and intensity into musical movement in Karol Szymanowski's *"Concertante" Symphony no. 4*; the syncretic *Symphony of Sirens* by Arseniy Aavramov and *Beef Kohlrabi Cantata* by Andrea Szigetvári; not to mention Kreidler's *-Boléro*, who forces the listeners' perception to add to themselves what was missing in the work (melody); Steen-Andersen juxtaposing real and virtual ensemble arrangements in his *Trio* into kaleidoscopic forms; establishing counting as dramaturgy of the work in *Trzysta* by Zielińska; or Boulez's open forms empowering the performer by granting him a gesture of choice.

What kind of *longue dureé* is this? It can be said that it is very rich and abundant, as for the fact that the process of crystallization of gesture from much more dispersed categories into an openly manifested one falls only at the end of the twentieth century (although one cannot ignore even the already mentioned much earlier Frescobaldi). The musical gesture certainly appears most clearly as a frame of Grisey's work: in the score *Partiels* (1975), which I personally consider to be the first canonical work directly gestural (named so because of the intention of the composer, writing in the explanation preface about the gestures of breathing-holding-exhaling) and in *L'Icône paradoxale (Hommage à Piero della Francesca)* (1992-94) introduces new understandings of the transformation of gestures from seemingly very distant semiotic systems (processual visual gestures of dramaturgy inside the painting and act of signaturing). It is also a time when, noticing the re-evaluation of the description of movement in music, Smalley writes about gestures and textures in his canonical texts from the 80s. Wielecki, on the other hand, develops and promotes his own approach to gesture in the 90s, the decade of my birth and childhood.

Why can't we say that the manifest announcement of a gesture to the world in the 70s by a former age as a category was a turn in music? Well, because Grisey himself, on the one hand, is not at all certain in nomenclature (Gestalt dialectic – *gesture*), and on the other hand – he does not hide the fact that he only makes a creative synthesis: he uses the thought of Deleuze and Guattari, and indirectly Merleu-Ponty, he is familiar with Schaeffer's attitude and thinking about the morphological-dynamic-expressive unity of the sound phenomenon, its adaptation in Lahenmanns *musique concerte instrumentale*, or many earlier positions: such as Hector Berlioz (who in his famous treatise on instrumentation encourages the "composing" of a synthetic sound); *Klangfarbenmelodie* or *Chronochromie*.

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[493] *Cf.* K. Szwajgier, *Sound images...*, *Op. Cit.*, p. 32 and d.

He must be familiar with Lutosławski's psychological form or Stockhausen's *Formelkomposition* (which impose themselves as certain matrices of thinking about form, dramaturgy as a "microscope", a "camera" of times and spectres), but also the performatism flowing from instrumental theatre.

Due to the assumptions of the gesture (including the postulate of compositional unawareness, validated by the consciousness of the recipient), I am convinced that the use of the concept is appropriate and necessary not only in relation to "problematic" structures, which cannot be described otherwise, without using the old nomenclature (although respectable and perfected, but omitting certain aspects that from a gestural perspective seem to be crucial).

Therefore, I do not believe that using the term retroactively (in history) and in relation to foreign cultural circles would be inappropriate, devoid of cultural or historical grounds. I think that in this dissertation I have shown that reflection, which is not indirect, but describing various fragments of gesture (synthesis of sound phenomena, perception as movement, psychoacoustic orientation of the creation of sound phenomena, mimetic forms and "translations" beyond the sound system itself) dates back at least to the times of Plato and Aristotle, the symbolic moment of formation of distinctiveness and consciousness of European civilization, and perhaps reaches much earlier and other civilizational circles (Pythagoras in India). As long as the musical gesture takes into account primarily the communicativeness of embodied cognition (or other cognitive categories), it is applicable to every human being, in every time and space of the globe. When the understanding of gesture narrows down, requiring naturalization of cultural categories or enculturation, the circle of recipients in time and provenance, and thus the universality of its use, is also narrowed.

The new research perspective emerging from this approach is therefore the analysis and gesture interpretation of the work already well known, processed and grounded in epistemiological thought, although coming from further and closer time perspectives, as well as the "foreign" one – coming from other civilizational circles. In a sense, it is at the same time an opportunity to "correct" and "reinterpret" about the hitherto ignored or twisted aspect of already known creativity, and at the same time an opening to completely new research horizons (especially ethnomusicological and cognitivist). The consequences of a more widespread adoption and development of the dialectic of gesture seem to be overwhelmingly fruitful and encouraging for a fresh research perspective. My enthusiasm stems from a deep inner conviction that a musical gesture can really be a perceptual-conceptual bridge over the numerous contradictions that have grown up in and between cultures.

4. Capturing the gesture – the case of Arvo Pärt's *Cantus in Memoriam Benjamin Britten*

With such an extensive, multithreaded dogmatic material, proposing various ways of understanding the musical gesture and highlighting its various aspects, it is not difficult to get lost. The impossibility of drawing an unambiguous and concise conclusion as to the nature of musical gestures results on the one hand from the adoption, following Herder's example, of a very human, anti-catalogue attitude, undermining the primacy of the binding power of linguistic, semiotic and cultural "straitjackets" and encouraging the adoption of relational ontologies aimed at psychophysical, sensory experiences is opposed to the position that everything that can be perceived through thought, It is transformed into semiotic systems. So how to study gesture? First of all, make the slogan "nothing about music without music" a reality, which is why complex judgments, statements and hypotheses should be compared with their practical interpretation by analyzing the application of the selected gesture implementation strategy.

The fundamental problem arises already in the pre-analysis phase, that is, in the selection of an appropriate, representative example. My goal in this work was to show gesture as a very capacious paradigm, open to reconciling different positions – both formalistic, idealistic, performative or abstract – as well as to show that both cognitive processes (embodied cognition) opposed to cultural ones seem to testify in favor of the universalism of gesture – both to early and modern music; music of the Western civilizational circle, as well as music of non-Western civilizational circles.

It would be "easy", I think, to "take to the workshop" in this analytical chapter the works of composers who directly defined themselves as "gestural" composers or at least used this concept intensively in the context of their art (often specifying it, using their own variants of understanding, and presenting sophisticated, expressive visions of their use; we should mention artists such as Grisey, Sciarrino, Billione, Filidei, Adámek, Kwieciński, Zych, Wielecki, Zielińska and many, many others). **I would understand such action as confirmation of confirmed.** The only advantage of such work would be to show the relationships and contexts created, as well as to assess the quality, comprehensiveness or innovation of the approach. On the other hand, cognitively it would not justify the widespread use of the dialectic of gestures.

A certain new quality (which I have not noticed so far in the more common circulation) would be the analysis and interpretation of the works of composers of the middle generation (the late 70s and the entire 80s of the last century) and the young generation (the 90s of the last century and the beginning of the present century), for whom both the performative aspects of the work, intermedia or relational, are "assimilated" and constitute a kind of daily "bread" (not to mention in the Polish environment Karol Nepelski, Piotr Peszat, Paweł Malinowski, Monika Szpyrka, Teonika Rożynek, Mateusz Śmigasiewicz, Wojtek Blecharz, Marta Śniady, etc.). In the latter respect, it seems almost impossible, or at least significantly restrictive, to reveal the true meaning of their works, when analysing and interpreting them, without taking into account any aspect of the musical gesture. Despite the allure of such an approach as a *novelty*, the first approach and observation of the communities of meanings and techniques emerging before our eyes, while maintaining creative individualism, it would still be, in my opinion, a confirmation of the confirmed.

Therefore, I do not consider it expedient and consistent with the set of research objectives to carry out a detailed analysis of *visibilium et invisibilium*, my sound spectacle accompanied by this description. Both because the gesture is a paradigm of its formation, which would result in the "relative ease" of revealing such connections. From the purely practical side, however, it is a fairly extensive, multi-layered work, in which I use not only many aspects discussed here, but I combine them in contextual assemblies, which generates a potential difficulty in conducting **an explicitical** "demonstration" of possibilities (I think, such explicitical laconic character I achieved in contextual commenting on the text of the description with excerpts from the work).

As the chapter that is just being opened will show, even the analysis of the (seemingly autotelic, ascetic in the structural sense of the work (although the outlined structural attitude is evidently strong and clear) which is *Cantus in Memoriam Benjamin Britten* (*Cantus in Memory of Benjamin Britten), in* addition relatively short (6 minutes) still generates many complex associations. Although it narrows the field of view (no broader performative aspects can be found here, for example), nevertheless, due to its radical approach and short duration (unidirectionality of the process, "novel" format), it **is explicite** in relation to the research goal I set.

For this reason, it seems that the analysis of an unusual, non-obvious and at first glance (and ear) example far from outright gestural thinking, and at the same time highly transparent (hence perhaps being accused of "ease"), which is the work of Arvo Pärt, will make it possible to at least partially demonstrate the universal qualities of gesture as an analytical paradigm, and will reveal perhaps underestimated values hidden in this work.

4.1. Basic information

The work was composed in late 1976 and early 1977, [494] and revised in 1980 and 2001. [495] Despite its title, the composer was already writing an elegiac piece for orchestra before 4 December 1976, the day of Benjamin Britten's death (about which Pärt learned on the radio the following day and deeply saddened by the news), which later took on the title of epitaph for the late British composer.

The decision to dedicate the work to Britten is not accidental, despite seemingly far-reaching differences both on the aesthetic, philosophical, religious, social and life levels of both composers. In a sense, the never-before-seen meeting between Pärt and Britten (whom the former was to deeply regret due to the awareness of Britten's "discovery" for himself shortly before his death) may resemble the unfulfilled meeting between Bach and Handel – stimulating the imagination on the one hand with the potential of contradict beliefs or attitudes both musical and life of both giants, and on the other, it seems, filled with sincere understanding, admiration and deep respect. Pärt stated that he experiences in the music of the Briton a clarity equal to the ballads of de Machaut (who remains the greatest master for Pärt) and this is a value that he himself seeks. This clarity, transparency as a separate value seems to be the main idea adopted in this work (and subsequent ones, expressed however by *tintinnabuli* thinking and technique), as the composer attests:

> "It is the clarity of the order that we all perceive consciously or unconsciously, so that it creates in us vibrations, a kind of resonance. Isn't that the mystery of music, of all kinds of music?"[496]

Perhaps it has also become a contribution to the success of the work, which has had unexpectedly many recordings, is performed often and willingly, arouses a lively reaction of the audience, and at the same time, invites to deeper listening, due to its contemplative mood, transcendent, ephemeral character and absorbing, multi-layered processuality.

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[494] Originally titled: *Cantus Benjamin Britteni mälestuseks*.
[495] Among the changes: the editorship of the title (*Cantus in Memory of Benjamin Britten*), change of the note next to violas with *soli* (suggesting a group of soloists within a section) on *sole* (suggesting a "solo" role of the whole group), removal of compositional bowings, change of bell pitch from e to a, removal of technique *Alternatim* (alternation of lines M and T within the layer – in the original version of the work, a given group realizes a melodic line [marked with arcs], and as part of the next "rotation" of the autorereproductive gesture, the tintinnabuli line [marked as *colla parte* with square brackets] – at the same time the second group oppositely and so interchangeably to the end of the work) by assigning specific, fixed roles to groups (e.g. 1. *vni I* – line M, 2. *vni I* – line T, etc.), in the bell line adding 3 bars of pause after every 3 beats (within each sequence), removing the fermata in the input of the string layer, changes in dynamics.
[496] E. Restagno, L. Brauneiss, S. Kareda, A. Pärt, *Arvo Pärt in Conversation*, London, 2012, p. 39.

The work does not have a commentary by the composer. [497] The only clearly distinguished element of semantization used in this work is the title, indicating on the one hand an obvious *hommage*, but also a kind of self-reflection about the adopted creative direction, inspired (or rather found in a different way in) Britten's oeuvre. The second semantic resource indicated by the title of the work is the characteristic introverted expressiveness of the work (perhaps indicating the self-expressiveness of the artist), the elegiac mood, and a kind of sensory intensity of sound processes. The third is the word *Cantus*, which I shall discuss later.

The work belongs to the early, though already formed minimalist phase and the use of *tintinnabuli*, the principles of which are clearly crystallized in this artistic implementation, realized with finesse, freedom and iron logic, and one can even be tempted to say that this realization is a model realization, which may indicate the potential character of the work as a masterpiece. It can therefore be concluded that this work reflects the beauty of natural expression (replicative development), the proportion of numbers, and the economical elegance of shapes, and at the same time, behind these otherwise aesthetic values, the poignant sincerity and truth of the composer's life attitude, which is confirmed by his creative attitude – radicalism, is visible.

4.2. Movement-Action-Meaning in the piece

The structure of this subsection refers to the triad of layers of Godøy's gesture, coinciding with Tomaszewski's[498] triad (and others, repeatedly mentioned in this work), defining the layers of interpretation of a musical work. From the latter I borrow the order in which the individual elements of the triad are discussed and the integral perspective of the work. From Godøy I borrow the order of performing research activities (levels), and from other authors distinguishing functions, descriptions of morphology, dramaturgy, *etc.* The last step is to distinguish the hierarchy of gestures at the level of getting *GTTM* in Roys interpretation and Smalley typologies and to carry out a semantic interpretation.

The axis of this subsection is therefore Movement as a representation of all objectively measurable and systemically (grammatically) describable elements. Action is

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[497] The commentary indicated in the score published by Universal Edition is the quotations of the composer and his wife from the book *Arvo Pärt in Conversation*.
[498] Triad synthetically included in: M. Tomaszewski, *Interpretacja integralna dzieła muzycznego. Rekonesans*, Kraków, 2000, p. 61; in connection with: M. Tomaszewski, *Odczytywanie dzieła muzycznego. Od kategorii elementarnych do fundamentalnych i transcendentnych*, [w:] *Teoria Muzyki*, 1, 2012.

understood as an attempt to describe the activation of the subjectivized mental experience of the recipient of the perceptual values of gestures in the work and their quality, in order to capture the aspirations through its movement and its properties to achieve some "goal" (psychoacoustic interpretation). The last element is Meaning as a representation of all systemically objectified individually perceptible elements, causing mental activation of the recipient's experience semiotically and culturally (according to established dictionaries).

4.2.1. Movement

The work betrays the features of the proper hesychirical style of Pärt, it is maintained (1) in the characteristic *tintinnabuli* technique (at the harmonic and contrapuntal level) derived from observations of psychoacoustic spectral properties of resonance and acoustic beats – not as starting points and arrivals, but constantly, consistently, precisely built tensions and relaxations, for which the obvious association is the sound of bells – and (2) in the structure of the canon *in prolatio* (mensural or proportional canon; at the horizontal level, temporal organization), based on the canonical juxtaposition of several layers at different speeds. Due to the strict rules of both techniques, which almost lead to the exclusion of the presence of free elements, resulting from the composer's "musicality", and not only precomposed; As well as *nomen-omen* achieving transparency of sound layers and structures constructed as a result of operations using these techniques, it should be acknowledged that the composer achieves this goal.

The work contained in 108 measures, in one part, with a uniform, monolithic form, is intended for string orchestra (symphonical rather than chamber), along with one bell. The composer defines the duration as about 6', although the performance practice oscillates between 5'30 and even 10'30". The tonality of the work is based on the A Aeolian mode, and the meter is determined as 6/4.

As for the meter of the work, it should be noted that the successive introduction of layers of the canon in *prolatio* causes the sense of homogeneity of the rhythmic structure to be disturbed (with the initial meter 6/4 auditorily perceived as a meter with a duple scheme: 3 + 3, the introduction of a twice released second layer auditorily perceived as maintained in the triple 6/2 meter, distributed into two measures 6/4, and thus perceived as filled with the 2 + 2 + 2 scheme, gives rise to a metric-rhythmic duality expressed in polyrhythm 3:2). The

dominant rhythmic structure is the trochaic and iambic arrangement: the longer-shorter value (half-note-quarter note) with different accent arrangements.

The canon in *prolatio* exesecuted in a string orchestra is one of the two most expressive processes in this work. It consists of five canonically exesecuted layers: voice (the so-called M[elodic] line based on the self-reproduced progress of successive steps of the scale downwards) with counterpoint (the so-called T[intinnabuli] line, *inferiori* in the 1st position, based on the sounds of the finalis triad: chord in A minor) – corresponding to each of the string orchestra groups: violin I, violin II, viola (this is the only layer without counterpoint of the T line, Hiller, for this reason and the adnotation *sole*, will define the viola layer as the most subjective in the work[499]), the cello (in measyre 54 they are divided: half supports the M line of violas, the other half realizes their own line M and T) and double basses.

The texture of this canon is constructed in such a way that each layer (counting from violin I and heading towards the double basses) is introduced an octave lower and twice as long as the preceding one – thus the double bass layer is sixteen times extended in relation to the initial violin I.

The work does not use other than standard performance techniques. The only variation is the use of violins and silencers in the part (perhaps for technical reasons, to "hide" possible shortcomings of the uncomfortable, high stroke at subsequent repetitions; or for purely aesthetic, expressive, timbral reasons).

The second expressive process of the work is the voice construction of the canonical layers (M-line). It is basically an self-reproduced scale procession, with a linearly descending feature. I understand self-reproduction in the sense that this procession "expands" with each successive repetition by another step, while maintaining its *finalis*, the pitch from which it begins and to which it (ultimately) strives. These repetitions, resulting from a mathematical conversion of rhythms, are grouped into two in which the *finalis* falls on a longer note value (trochee), and two in which the finalis falls on a shorter note value (jamb).

The bell part is a separate, independent horizontal layer in relation to the string orchestra part (dualism of the part), not remaining in a canonical relationship – it is based on single hits on the bell. These cycles consist of three hits, each hit interpolated by the whole pause bar; cycles are grouped in 11 segments separated from each other by 3 pause bars; In score no. 13 the bell part is suspended (for 21 bars).

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[499] P. Hiller, *Arvo Pärt*, Oxford, 1997, p. 103.

The only element that seems to be out from a pre-composed predefined scheme (I cannot say otherwise, not having access to the composer's sketches and not being able to verify it) is the dynamic structure of the work, contextually regulated, perhaps spontaneously, "musically", "by ear", without a fixed order, often contrary to the musical sense perceived at first glance (change of dynamics to a higher degree in double basses in measure 28, in measure 52 at the end of the phrase or in measure 39 in the violin and falling in the middle of the phrase). The macroplan of dynamics shows the feature of increasing from *ppp* to *fff*. The effect is enhanced by the introduction of the self-reproductive procession from measure 64 of the articulation marcato (accent with *tenuta*), and the introduction of expressive notes: *molto espr.* and *(non dim.)*. The culmination, both dynamic and expressive (long-lasting chord in A minor) of the work is its unambiguous ending.

The work begins with a cycle of three hits of the bell (up-beat, not occuring on a strong beat of the measure), after which in measure 7 the canon in *prolatio* (also *up-beat*, not for a strong beat of the measure) is introduced. The next canonical layer is introduced after a half-note pause with a dot and each subsequent layer doubles the value of the preceding layer (so the double basses enter after 7.5 bars from the introduction of the canon). Each "turn" of the self-reproductive procession is repeated: vn I 21 times, *vn II* 16 times, *vle* 12 times, *vc* 9 times, *cb* 6 times. After completing the "rotations", the individual layers "freeze" the subsequent components of the A minor chord (in the same order as they were introduced as separate layers of the canon).

The work ends with the string orchestra rupturing the long-lasting chord in A minor (*fff* dynamics), with a simultaneous silent ringing of the bell (*pp*). Through this treatment, the effect of blurring the audibility of the moment of excitation of the bell is achieved, and the only audible sound after "rupture" the strings is resonance, the sound of the bell, and with careful listening (or very good mastering of the recording) it is possible to hear the bell partials, including the Picardy third (5th partial), which introduces a kind of tonal dualism in A minor / A major.

Analysis, i.e. the study of objectively measurable and describable orders and elements in the work, may also be subject to many other factors (e.g. the application of fingering, bowing, selection of sticks, conducting means necessary to execute the score, etc.). Moreover, I do not think that *interpretatio cessat in claris*, on the contrary – *omnia sunt interpretanda* – however, for functional reasons, the "technical" image provided of the work should suffice for the short term.

4.2.2. Action

An attempt to describe the quality of synthetically understood "beings" in a work (fragments, larger wholes, and even entire processes) striving through their movement and its quality to achieve a specifically understood "goal" is always the most subjective element, looking inside the "interior" of their individual psychophysical reactions, exposed to the "debatability" of feelings in intersubjective reception. So it is basically an interpretative action: intellectual identification and naming of the processes taking place.

Due to the reluctance to systematize inspired by Herder, I present here in a rather loose way (non-committal, and even more not dogmatic), although orderly, grouped according to the perspective of observations, divided according to their quality and perceptual feeling, as well as for the same reasons called and described.

I. **Observation / Introspection**

The first illustrative listening to the work gives a sense of uniformity of the process (smooth dynamic gradation), emerging from silence and returning to silence. Despite this monolithicity, however, some process phases can be distinguished:

- initiation of a process with static characteristics (bell),
- initiation of a process with dynamic characteristics (strings),
- continuous process stabilitating,
- stabilization of the process (cadence, culmination),
- unexpected solution of the process.

II. **Quantitative/qualitative method[500]**

Subsequent listenings of the work give a detailed sound "image" of phases, by distinguishing the class of basic gestures (including those composed of gestures, movements of an even lower order), emblematic for a given phase (and quantitative, proportional characteristics of their uses):

- gesture-motion of the bell (consisted of two simpler ones: hitting the bell and interpellation with silence),

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[500] I omit the quantitative method as highlighted in the analysis section.

- gesture-motion of strings (self-reproductive, in different time perspectives, punctuated [long-to-short relation], but rectilinear falling),
- *arpeggio's* gesture ("figuration" of the A minor chord, "freezing of *finali*"),
- *sostenuto* gesture (withstanding chord, stopping the solution),
- final gesture (consisted of two simpler ones: rupture and resonance).

III. "**Capturing**" motion, imaging

This is the moment when the basic palette of gestures can be attributed to a more general "motion" formation, a qualitative process of a higher order, also less important phenomena, which at an earlier stage were not distinguished as gestures. During subsequent listenings, in addition to distinguishing idiomatic gestures for each phase, a sense of the characteristics of the assembly at a higher level is also formed. From my perspective, the most important perceptual feelings are:

(1) sense of spaciousness (spatial gestures):

- in physical space: carrying out the canon both visually and acoustically "from the left" "to the right" (stereophonic effect),
- spectral density (metaphorical space): executing the canon in different time perspectives, providing the opportunity to listen to individual layers (Bregman's auditory scene[501]); the overall picture of density as opaque (not transparent). This impression is intensified by the "breaking through" of the *finali* of subsequent layers with some "difficulty", as if across the other layers,
- Spectral space (metaphorical space): the process appearance of *finali* and their fall, with the simultaneous development of all bands, gives the impression of building separate, developing local spatial (altitude) plans in a given band, and at the same time a wide global space (the space of the sum of the processes of given layers – giving the impression of "ocean", "abyss"). The descending shape of the movement from very "high" to very "low" gives the impression of metaphorical spatial modulation (transition),[502]
- the impression of space due to the timbre (metaphorical space): the introduction of *sordini* in *vni I* – in addition to the timbral impression of "blurring", "unreality", "dullness" – gives a specific spatial "depth", the impression of "distance" (*da lontano*; like a low-pass filter) in relation to the

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[501] *Cf.* A. S. Bregman, *Auditory Scene Analysis. The Perceptual Organization of Sound*, Cambridge, 1994.
[502] *Cf.* H. von Helmholtz, *Op. Cit.*

other layers (without attenuators). This impression is strengthened by the primacy of the presentation and the clear velocity of the *vni* I layer, hence the auditory treatment of it differently (as a figure, object) than the other layers (background, shadow of the object, afterimage). The second impression described here is confirmed by the zonal theory of time[503], which states that with increasing time scaling, as a result of psychocognitive limits in perception, a new quality is created – a forced leap to the reception of a higher order,

− The impression of different spaces due to the timbre of the instrumentation: the sound of the bell – as a completely different type of excitation, continuants and termination of sound than in the string family – always seems to be acoustically embedded "in a different space". Therefore, the most important gesture in the whole work, i.e. the final gesture, in itself also gives the impression of spatiality as a synthesis of two opposing families of instruments;

(2) spinning motion (*vortex* gesture):

− the mobility of the local canonical layers (giving the impression of collapsing) juxtaposed with the static of both the bell layer and the general string layer (giving the impression of stagnation in a wide space) gives a specific ambivalent feeling of indefinite, wandering, circulating movement, stretchy sinking into the abyss,

− reduction of the highest bands towards the lowest: this strengthens the disappearance ("freezing" at the *finali*) of faster layers (violins I, II), the remaining longer "afterimage" layers (violas), up to the longest ones (cellos, double basses) intensify the feeling of moving to the lowest parts of the absorbing space,

− the impression of "absorption" by the longest layers is strengthened by a disintegrated, split process of dynamic growth (devoid of logical and sometimes musical justification [e.g. measure 28 in double basses]),

− The self-reproductivity of motion in local layers ensures a kind of "non-synchronicity", "randomness", in which the meeting of "weaves" of trajectory leads to ever new "juxtapositions". In this sense, the spinning motion is always the same (read the self-reproductivity of motion) as well as different (perceived places of contrapuntal synchronization). An infinite spiral (or maybe

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[503] This theory is founded on Stockhausen's theory of the time octave and based on Peirce's semiosis, present in Grisey's intuitions about the typology of the times of insects (birds)-human-whales. Formulated and described theoretically by Bielawski. *Cf.* L. Bielawski, *Czas w muzyce i kulturze*, *Op. Cit.*; L. Bielawski, *Strefowa teoria czasu i jej znaczenie dla antropologii*, Kraków, 1976.

a screw?) brings the superimposition of processes in different phases of intensity;

(3) Growth (accumulation gesture): results from a continuous, linear, and at the same time scattered in layers gradual dynamic enhancement (the effect of a smooth *crescendo*), and at the same time enhanced by articulation and expression (*vibrato*). Growth juxtaposed with spinning (accidental) motion gives the impression of contradiction, ordering chaos;

(4) stabilization and entropy: stabilization by establishing a strong, static tonal center in the form of a chord A minorl, entropy through "deceptive" solution and chaoticism of counterpoint "weaves";

(5) tension-relaxation:

- global: higher order (increasing dynamics – tension, final gesture – relaxation),
- local: lower order (gesture of bell hit prolonged by resonance, self-reproductive gesture – upper *finali* cause tension, linear movement descending towards the lower *finali* – relaxation),
- They are also created at the interface of the perceptual perception of structures as smalleyan gestures and textures: gravitation towards stability, certainty (reliability), intentional indeterminacy arouse relaxation, gravitation towards dramatic narrativity, unpredictability, linear growth arouse tension.

In addition to the description of psychophysical experiences, it is good to support an objectified presentation of the energetic-spectral shape in time in the form of a spectrogram. Below is the entire piece:
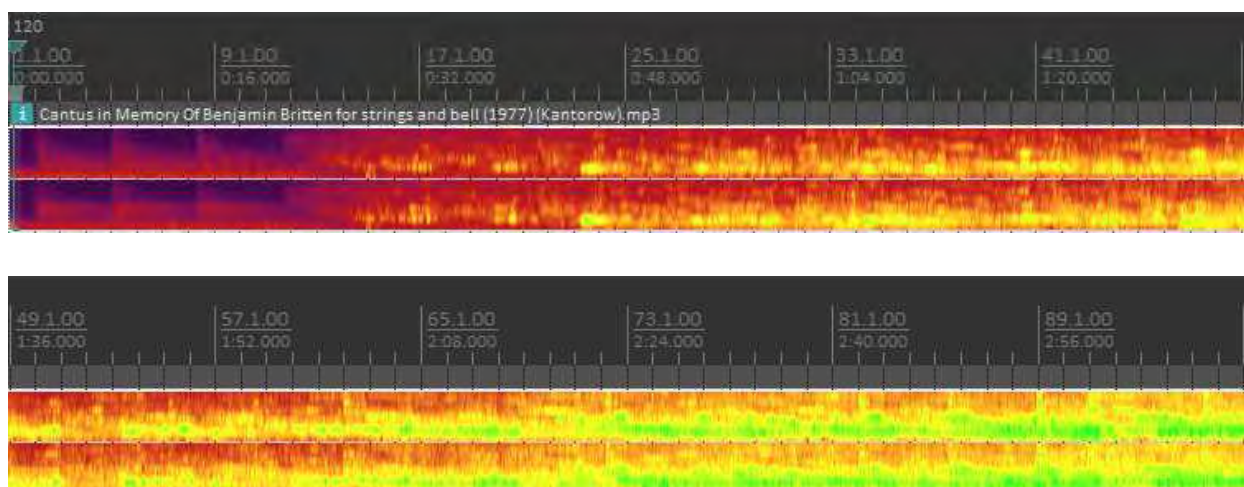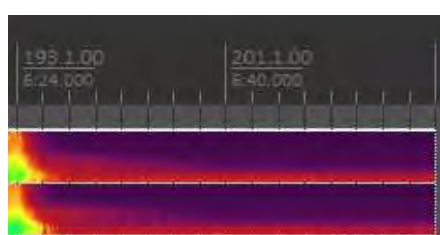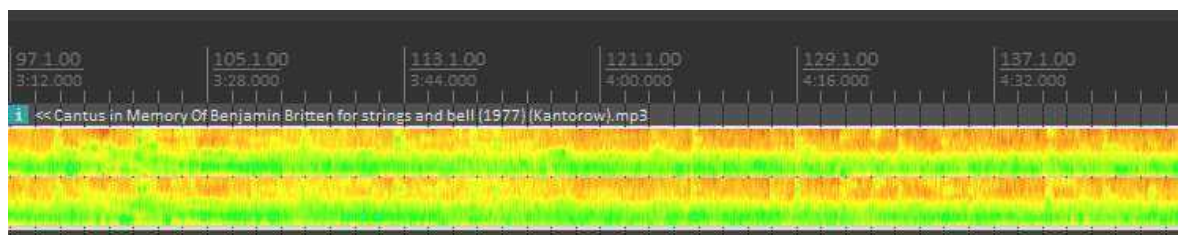
Graph 65. Sonogram of *Cantus in memoriam by Benjamin Britten*. Performers: Tapiola Sinfonietta conducted by Jean-Jacques Kantorow [in:] *Summa*, 1997, CD.[504]

The image of the sonogram confirms the perceptual reception of the five phases of the work and their character. At the same time, it allows for a visual representation of sound phenomena, which will be helpful when predicating on gestures of ever higher orders. The spectrogram reveals some similarities (perceived geometrically):
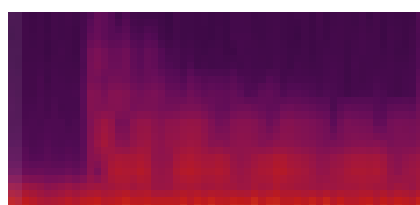
Graph 66. Bell gesture. *Cantus in memoriam Benjamin Britten* (sonogram).

is a visual representation of the bell gesture. Clearly noticeable triangular shape corresponding to smalleyan *attack-decay* archetype: the impact and disappearance of higher partials to lower ones

Graph 67. Final gesture. *Cantus in memoriam Benjamin Britten* (sonogram).

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[504] All spectrograms for the purposes of this work were generated by me in the environment *REAPER*.

It is a visual representation of the afterimage gesture, also a clearly visible archetypal construction of *attack-decay*.

But:
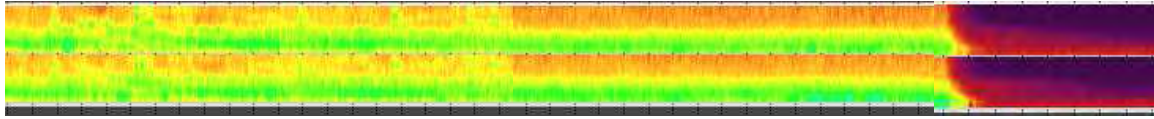
Graph 68. *Arpeggio*, *sostenuto* and final gestures (compilation). *Cantus in memoriam Benjamin Britten* (sonogram).

It is a compilation (abbreviation) of *arpeggio* gestures (accumulation, stabilization of energy levels – the shape of an inverse triangle, increasing and not reverberating), *sostenuto* (stability, homeostasis) and final (sudden drop in energy and reverb). Together they form a higher-order structure with the archetype *attack-continuant-decay*.

NB The perceptual separation of the bell from string instruments seems to be confirmed by the spectrogram – they have different graphs of energy and mass. Similarly, the distinction of *vni I* from the other strings (disappearing about 4') – from which there is a clear jump of stabilization and its further stabilization in *arpeggio* and *sostenuto* gestures.

I think it is necessary to make a exception here. If we look "auditory" at these gestures, they are distinguished due to their "domination" in a given phase and the figure-background relationship. In principle, however, one can try to reduce the actual list of lower-order gestures: looking from a certain point of view, the gesture of *arpeggio* and *sostenuto* is basically identical due to Peirce's pragmatic formula (the gesture of crystallization in A minor can be considered identical with the gesture of crystallized A minor in the object-effect relationship, i.e. marking a higher order semiosis), similarly the final gesture can be considered as a form of juxtaposition of two gestures: rupture and resonance. This is an interesting case when the inseparable sound extracted from the instrument as a simple unit, of the lowest order, is actually acoustically composed of two elements: sound excitation (impact) and reverb. The opposite process takes place in the perception of the gesture-motion of the bell: I distinguish it by juxtaposing two elements (hitting the bell and interpellation with silence) as a homogeneous whole – in this sense, the whole should be "pulled out in front of the brackets", and the gestures of the lower order cease to have a significant meaning (it cannot be said, apart from the shape of the bell line, that the work operates in a significant way with silence).[505]

The combination of basic (unitary) gestures would look like this:

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[505] This does not apply to the remark indicated at an earlier stage of the analysis, that the work emerges from silence and returns to silence.

- Bell gestures:
  - Bell motion:
    - Bell hit,
    - interpellation with silence,
  - Final gesture:
    - rupture
    - resonance
- string motion:
  - the appearance of *finali*,
  - descending continuation,
- Chord gesture in A minor:
  - *arpeggio's* gesture,
  - *Sostenuto* gesture;

complex gestures (process shape):

- tension-relaxation,
- stabilization and entropy,
- accumulation-rupture.[506]

IV. Processing and representation

In Pärt's piece, the main role is played by repetitions (and their difference, to refer to Deleuz) rather than processing (variation). However, because these repetitions occur with significant but predictable changes, I call it replication (a conscious reference to biology) – the repetition of essentially identical material, with small changes that allow to isolate new strands of DNA in relation to the matrix. So I will focus on the forms of representation, i.e. the separation of gestures due to the preservation of an iconic identity: [507]

(1) The intuition of the triangular shapes, revealed by the spectrogram, can be easily verified with the score.

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[506] A break added contextually as a complement to the gesture into a purposeful larger whole.
[507] This phrase is repeated, as already mentioned, after Szwajgier.

Graph 69. Illustration of motion vectors in the form of lines and triangles. *Cantus in Memoriam Benjamin Britten*, mm. 17-21.

Graph 70. Self-reproductive triangle. *Cantus in Memoriam Benjamin Britten*, mm. 19-21.

233

Graph 71. Motion vectors, self-rereproductive gesture vectors and spinning motion vectors. *Cantus in Memoriam Benjamin Britten*, mm. 1-16.[508]

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[508] Vectors of motion: statics (marked in blue) and dynamics (marked in red), vectors of self-reproductivity (direction of arrows) and rotation (marked in yellow). A. Pärt, *Cantus in Memory of Benjamin Britten for string orchestra and bell (1980)*, Universal Edition (UE 35 536), 2017.

Even a cursory visual analysis of the score confirms that the self-reproductive gesture is a visual and audial representation of the *attack-decay* archetype. The attack (the widest moment of the sides and hypotenuses) marks the high *finali*, perceptually perceived as the center from which the contrapuntal motion moves away, iconically reflecting the value of resonance. This is strengthened by constructing a layer of two lines: the T-line as a tonal element (audible resonance of the first six aliquots of the bell), the M line as liquefaction, showing the movement of "fading" (softening the "angularity" of the T line, moving within the triad in A minor).

The score reveals something else: the gestural dualism between linear and triangular structures. Lines (bell hits, *sostenuto* gesture) contextually are given the role of texture (background), and triangles – role of gesture (figure). A perceptual tension is created between these antitheses.

In this sense, the dramaturgy of the work is the dramaturgy of a triangle, or rather of many replicated versions of two basic opposing triangles: on the one hand, the organization of the whole form as a constant, continuous, consistently increasing process (one dynamic and articulatory triangle). On the other hand, linear but replicative instability, excitation of tension impulses and their discharge stretched more and more over time (many tension triangles). These triangles retain their essence, but their shapes change along the elongating hypotenuses (expressive-directional) and sides (temporal and ambitus). The process of the piece auditory and on its visual depiction is therefore dynamistatic. [509]

The sound motion, taking into account their registers, intensity and density, can therefore be easily illustrated by mapping the score with triangles. Such imaging reveals several layers of psychoacoustic operations, which can also be described as gestures distinguished at different levels (hierarchical, functional, iconic): it results from the "triangle" construction I mentioned, and that despite the essential identity of the material, it is self-reproductive, so each time it leads to new juxtapositions, "weaves".

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[509] *Cf.* L. Zielińska, *Teoria trójkątów, czyli kształty ekspresji w muzyce Lutosławskiego*, [in:] *Monochord*, t. 11, 1996, pp. 41-64. *NB* I found a similar observation, although discussed in a different context, in A. Jarzębska, *Wybrane aspekty techniki wariacyjnej w twórczości Witolda Lutosławskiego*, [in:] J. Astriab, M. Jabłoński, J. Stęszewski (eds.), *Op. Cit.*, p. 150 and d.

Graph 72. Illustration of vectors of line motion and self-reproductive triangles of different sizes. *Cantus in Memoriam Benjamin Britten*, mm. 17-21.

This process, as has been noted many times, is divided into six separate layers – five marked by successive "rotations" of the auto-reproductive gesture, and a fixed line determined by successive cycles of bell ringing. Self-reproduction is the essential vector of the work, where the self-development of the linear shape of motion resembles the action of retrying (modified each time) until the final achievement of its goal.

In this sense, juxtaposing it with the general plan of dramatic growth, one obtains an image of renewing gestures, making them with ever greater impetus and "attempt". The tension triangle presented in this way can also be externalized in the form of human limb movement. For me, the closest reference is the dynamic "throwing" of the hand forward (as if a blow) and the return, draught, slowing movement (to the usual position). You do not need a very sophisticated imagination to be able to further translate this gesture (e.g. into the language of audiovision dramaturgy, Hollywood films): a wounded, desperate, saddened, anxious person, in trauma, hits e.g. a wall with her fists – getting tired and giving in to emotions more and more, there is an increasing time interval between individual strokes, although they are made more and more. It is not an image of embodied cognition – while listening, I do not have the reflex to strike to the beat of auto-reproductive gestures – but an intellectual association.

Other gestures should also be distinguished, due to the forms of representation of sensory experiences (with the preservation of a certain iconic element):

236

(1) *morphing* gesture ("emergence"):

‒ "emergence" from silence: the work is framed by silence (written in the score), what's more, individual layers are introduced in the *up-beat*, which gives the impression that the movement of sounds "emerges" naturally from silence,

‒ "emergence" from another gesture: (1) the layer of strings in the first sounds refers to the statics of the line marked by the ringing of the bell, as if a continuation that transforms; (2) weaves emerge from combinations of counterpoint layers;

(2) the gesture of "presence-absence", based on satisfying the psychoacoustic needs of the presence of certain sound elements (fullness *of sound versus* "narrow" sound):

‒ operating the bell (medium band) – orchestra relation (development of all bands available to the orchestra), including by extinguishing (stopping) layers,

‒ quite late introduction of the lowest frequency bands (after about a minute) gives the impression of a sense of lack, satisfactorily satisfied by the introduction of a low band,

‒ oscillation, playing with uncertainty, arousing the need to achieve some form of ending (and satisfying it in an "unexpected", "deceptive way");

(3) Tension-relaxation gesture:

‒ incidental:
   o dissonance-consonance within the layer (M line *versus* T-line),
   o some moments of layering, giving the impression of *a stretto* (no. 9 in the score) – moments of "weave",

‒ Sensation of slowing down on a microscale (increasing relaxation):
   o by extinguishing subsequent layers by stopping at *the finalis* (*arpeggio* gesture),
   o Through the acoustic illusion – the long-awaited *finalis* (tension) of the auto-reproductive gesture occurs at increasing intervals, which causes the impression of "losing impetus", slowing down the motion (and with it increasing relaxation). This impression is blurred the more the layer is "stretched" in time – impossible to grasp in the double bass layer,

‒ the impression of continuous variation (the expansion of the "rotations" of the auto-reproductive gesture, the juxtaposition of rhythmic trocheic and iambic

orders) building tension (due to the gesture of self-reproductive motion) juxtaposed with the protency of processes in the work, building relaxation,

- juxtaposing the very long, expressive and quite loud withstanding of the final chord in A minor (if count from No. 16 in the score, lasting 40") with the fleeting sound of the bell. Inducing tension, by waiting for completion, dissolution or introduction of a change module. The sensational "infinity" of sound duration in this case does not satisfy the need for relaxation (after all, it is a stable duration, on a consonant, *finalist* sound) and that it is "ruptured" in a sudden way (in a uniformly read gesture of "afterimage" – a synthetic structure that cannot be read either without the element of rupture or without the element of reverb). Only the sound of the bell, resonance (Picardy third) satisfies the need for rest;

(4) "afterimage" gesture – the relation of the figure to the background, gesture to the texture:

- higher synthesis of the final gesture. The picardy character of the ending softens the elegiac expression, the dramatically increasing course in the key of the minor and the "light" of the major third, evoking the visual experience of "the sun breaking through the clouds", brightening the darkness. And despite everything, despite the introduction of light, the impression of tearing, splitting, remains,
- The relation of the *vno I* layer to the rest of the strings gives the impression that the other released layers are the "shadow" of dynamic motion. The problem of zonal time theory returns.

Using Peirce's pragmatic maxim and the idea of infinite semiosis, I can make another reduction in perceived gestures. The gesture-motion of the strings is thus the equivalent of the structure of the bell hit as a sign in the process of semiosis (along the axis of iconicity, and as pragmatically identical with the effect – *the archetype of attack-decay*). On the same effect principle, the gestures of stabilization and entropy, rise and rupture, etc., can be reduced as effectually equivalent to tension-relaxation excitation.

The combination of basic (unitary) gestures would look like this:

- *Attack-decay:*
  o Bell motion:
    o the bell hit (attack),
    o interpellation with silence (*decay*),

- o string motion:
    - o the appearance of the finalis (*attack*),
    - o *Decay*
- o Final gesture – "afterimage" gesture:
    - o rupture,
    - o resonance (*decay*),
- − A minor Chord gesture (*attack-continuants-[decay]*[510]):
    - o Gesture *arpeggia* (*attack-continuants*),
    - o Gest *sostenuto* (*continuants*),

At this point, it can already be seen that both the procedural dramaturgy of the work and the gestures that make up it exhaust the entire Smalley triad (the cycle of the "life" of sound) *attack-continuants-decay*.

Complex gestures (process shape):

- − Tension-relaxation:
    - o Entropy-stabilization,
    - o Accumulation-[rupture],
    - o Absence-presence.

V.   Simulation (Model)

Using Roy notation (Chapter 1.3.3., Figure 2.) I have charted the indicative, stratification, process and rhetorical (stable and unstable) and rhetorical categories.

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[510] *Decay* Added contextually as a complement to the gesture into a purposeful larger whole (refers to the figure on page 239, showing a sonogram of the list of gestures *Arpeggios-sostenuto* and the final gesture).
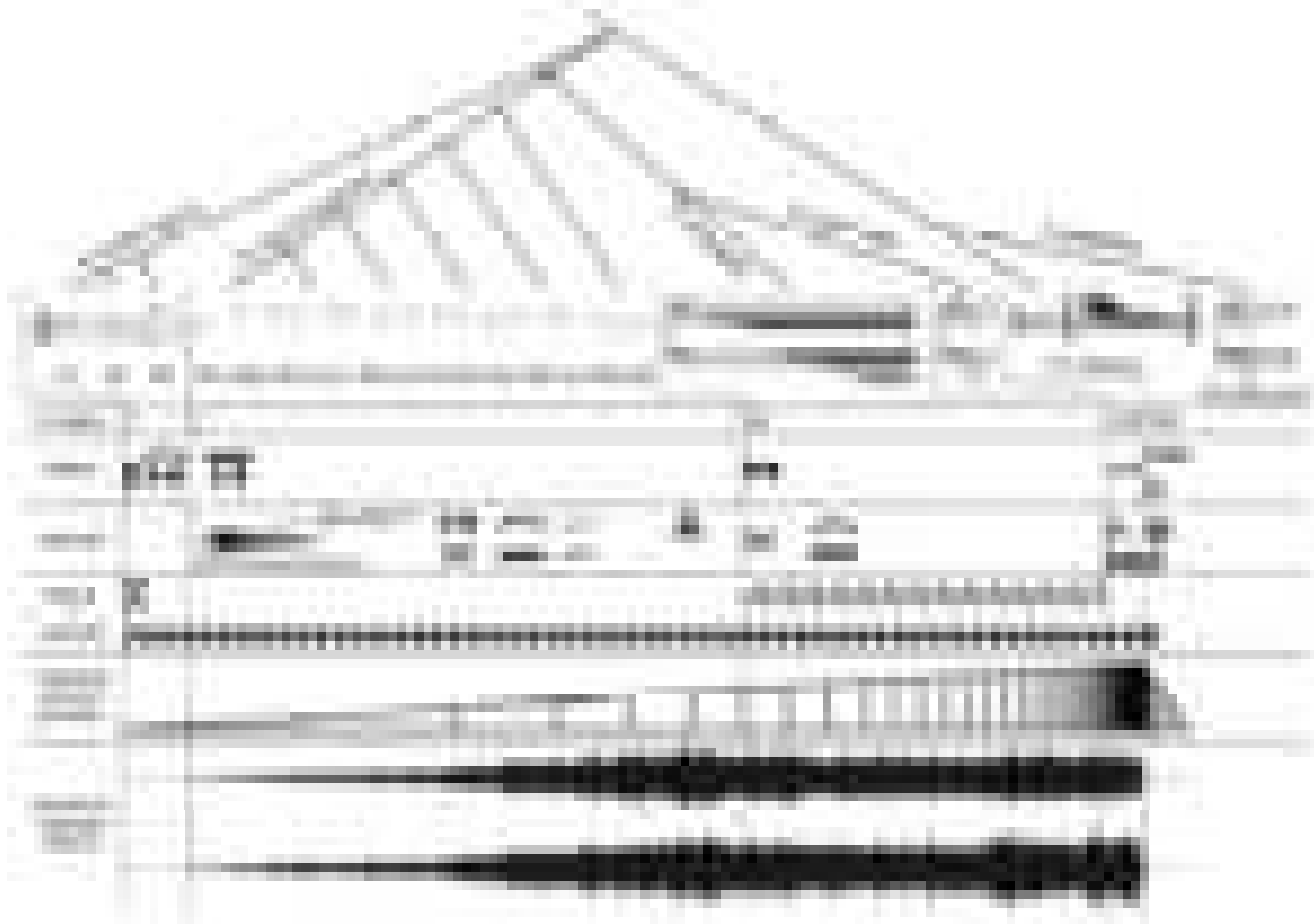
Graph 73. Representation of the gestures hierarchy and orientation, stratification, process and rhetorical qualities according to Roy on the example of *Cantus in Memoriam Benjamin Britten*.

The conclusions drawn from the graphic representation of the hierarchy of gestures and the qualities attributed to them in *Cantus in memoriam by Benjamin Britten* essentially coincide with the presented description of the perceptual reception of the piece (action), including the thesis about two types of expressive triangles (general dramaturgy and dramaturgy of the self-productive gesture, which are their opposites) and about the existence of uniform linear movement (bell, as a homogeneous and static part) – i.e. two simultaneous opposites (as opposed to successive opposites in the string layer), and morphing, synthesis between layers. At the same time, it allows you to see a number of treatments that until now may have seemed hidden – other opposites. Thus, it can be noticed, for example, that the form *of the* opening and closing statement is entrusted to different layers – the first to the bell, the second to the strings – which confirms the contextual (or rather perceptual) rotating role of the layers as figures and backgrounds. At the same time, the hierarchy (dependencies) of gesture complexes (let them be called structural, resulting directly from the structural shape) is very well visible, on the one hand, and on the other hand, a series of gestures remaining outside the hierarchy (as categories of process, orientation, rhetoric and stratification – I will call them contextual gestures). In this sense, a distinction can be made between a clearly vertical formation and a horizontal shape. According to the assumptions of *GTTM* (Roy and smalley's proposition), inference about metaphorical, symbolic and semiotic categories is a separate process from the description of perceptual qualities.

4.2.3. Meaning

The processes of perceiving end in interpretation, i.e. the processes of "grasping" meanings – both subjective and intersubjective. The interpretation of cognitive categories ended with capturing a relatively clear picture of the hierarchical structure of gestures – their complexes and potential sources. [511] Now they are composed not because of psychoacoustic

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[511] It can be noted that I used Peirce's semiotic method of semiosis in the previous section. On the one hand, I find it natural to explicate the process of perceiving gestural complexes of an increasingly higher order in sensory perception (and this, it seems, in an effective way). On the other hand, it is impossible to deceive the fact that this is a methodological abuse, trying to describe the cognitive process (perceptual, psychophysical) I used the semiotic method. Here the problem arises whether the perceptual phenomenon being perceived and causing psychophysical effects (1) in experience already functions as a sign after the passage of the "barrier" of human skin inside muscles and skeletons, and into the brain, (2) the description itself is sign and interpretive, so it analyzes by a semiotic method a certain sign created by me, denoting an object that I am not able to express in any way, It remains known only to me and my own body (even if I cannot fully understand it myself, distinguish the conscious from the unconscious and comprehend), regardless of the similarities of experiences in other people and the communication that arises here. Methodological eclecticism is therefore a form of inexpressible expression, using (perhaps defective) various means, and my role is determined by fascination with the phenomenon and an attempt to explicate it.

aspects, but semiotic aspects – setting experiences in reference to other experiences and systems (grammars, dictionaries), including assigning meanings.

I. Perception (meaning "generational", within one system of signs, internal)

It is therefore safe to notice that many of these gestures, which have already been distinguished, can be perceived at this stage from the perspectives not only (referring to Cassirer) of signals forcing a psychophysical reaction, but also from a semiotic perspective, forcing the mind to react, simply assigning them to the category of functions, e.g. Tagg, or McNeil-Zhao (omitting these elements requiring interpretation of meaning). Others, in turn, should be interpreted (and thus moved to a higher level of complexity), using cultural dictionaries or own intellectual dictionaries, based on life experiences, thinking process, etc. A number of gestures are omitted (I mention the most important) to maintain the readability of the typology. Where necessary, I shall briefly justify the reason for the attribution.

Using the Tagg's typology of musical signs, I distinguish: (1a) **sound anaphones**: in the form of the use of a *campane* instrument imitating the sound of a bell (associated with a church tower or town hall), [512] (**1b) kinetic (spatial) anaphones**: in the form of spinning motion, linear descending motion (rhythmics of movement in violin I), elements perceived as spatial (actually or virtually: ambitus space, spectral density, launching string layers, *morphing* gestures, retry [including dynamic and accent changes], *etc.*), (**1c) sensory anaphones**: generally understood tension-relaxation gestures (muscle tension-relaxation, breathing cycle), instrument sound (metallic *versus* soft as velvet), (1d) **composite anaphones**: illusions, illusions (e.g. the sensation of slowing down), (**1e) social anaphones**: presence-absence gestures, **(2a) episodic marker:** gesture of "afterimage" as marking the ending (closing and denying its categoricalness), (**2b) episodic determinants**: gesture of ringing the bell as a form of beginning (opening), *arpeggio's* gesture as marking the phase change, *sostenuto* gesture as a form of preparation for the end (dominant, climax), **(2c) diatactic signs:** The fusion of layers of bell and strings into one

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[512] I say this on a functional basis: the bell on the tower has a signal function (on the one hand, determining the times of the day, as well as determining certain ritual [magical] stages – accompanying the liturgy, or a man in important, historical moments, as well as the moment of farewell, funeral – I omit the motif of the bell as a "pest" in the soundscape; *Cf.* R. Murray-Schafer, *Our Sonic Environment and The Soundscape the Tuning of the World*, *Op. Cit.*), the orchestral bell is an instrument (so it performs a purely executive function), even though both generate sounds. The objective basis is the fact that both have different sizes, feet, shapes, ways of excitation, etc. (and thus sound characteristics), although they generally produce similar sounds. So I assume that the instrument orchestral bell can imitate (as a miniature) what it is not, i.e. the bell on the tower.

process, the fusion of string layers into one process, the gesture *of morphing* as a blurring of the differences between processes. [513]

Using the McNeil-Zhao typology, we can distinguish: (**2a) iconic gestures:** trocheic and iambic rhythms[514] (the sensation of rocking), the afterimage gesture (as a representation of the experience of state change), the *vortex* gesture (by evoking the experience of a rotating screw), the gesture of the figure-background (object-shadow), the movement of the strings resembling the movement of the body (object) down and slowing down, emerging (*up-beat*, as a clear motion experience, not occuring on the strong part of the bar), *etc.*, (**2b) metaphorical gestures:** modus a aeolian as sad (evoking a soft, flabby silhouette of a sad person[515]), afterimage gesture (e.g. as the emergence of the sun from behind the clouds, the translucent of "light" through the density of darkness), the gesture of renewal (as a repetition of a physical but also psychophysical activity), the gesture of synthesis (the creation of a new quality at the junction of dualities), the gesture of tension-relaxation, the gesture of presence-absence, (**2c) accent, pulse, *beat***: the bell hit as the beginning of the process, accentuation of *finalis*, dynamic and accentuatory reinforcement (*marcata*) of the ending, *arpeggio* gesture (*morphing* – as a blur of movement), *sostenuto* gesture, etc., (**2d) deictic gestures:**   Transition from high to low registers (delineating spatially high and low), the gesture of "leading" sound through the orchestra (topophonic), layers as spaces (metaphorical, *da lontano*).

I omit some explanations of some metaphorical and emblematic gestures, due to the need to "dictionary" read them. I'm not saying that all the categories described above will be culturally understandable to other people. I describe first of all my own perceptual perceptions, which must be determined by naturalization or enculturation by my participation in the circle of Western culture, being a professional, educated musician, having a humanistic sensitivity, *etc.* In my explanations, however, I try to objectify myself by distinguishing between what refers to sensory experiences and what refers to mental orders.

Using Peirce's pragmatic maxim and the idea of infinite semiosis, I can make another reduction of perceived gestures, due to the closer or distant, iconic or metaphorical functional connection (comparison, similarity, perceptual sensation) of gestures with the biological functions of the organism of attack with heartbeat, or muscle tension, continuation with holding muscle tone, and ending with muscle relaxation.

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[513] I omit the categories of stylistic signs at this point due to the need to read them culturally.
[514] I will later assign these rhythmic compositions to the category *hoquetus* as a sound representation of the rhythm of the silhouette of the person sobting and the sobbing process itself.
[515] According to Guczalski's interpretation.

The comparison of basic (unitary) and complex (process) gesture types would look like this:

– *Attack-decay* = tension-relaxation
– *Attack-continuants-[decay]* = tension-hold-[relax]

I come at this point (at this stage, morphological) to obtain a functional duality of gestures.

II. [516] Reference and interpretation (external "modulation" meaning in the signs system)

The non-systemic interpretation of the observed phenomena well illustrates the smooth transition between intra- and extra-systemic references. When I mentioned triangles, I deliberately omitted one of the conclusions of Zielińska's considerations, who, describing her references in perceptual perception, describes the musical results of shapes corresponding to the self-reproductive triangle as elegiac, and the musical results of shapes corresponding to the dramaturgical triangle as optimistic. [517] In this sense, I not only attribute iconicity or metaphorical iconicity to the similarity of phenomena, but I metaphorically transfer them to a higher level of complexity. This time, my conclusion of the previous branch will introduce a further continuation of considerations.

One of the platforms that combine the individual elements and assemblies described quite carefully above in Pärt's work is the introduction of the category of dualities. I will list a few that seem to me to stand in spite of the monolithic form of the work: tonal dualism (A minor/A major), metric dualism (both as 2:3 polyrhythm and *down-beat and up-beat*), rhythmic dualism (trocheic and iambic orders), pulse dualism ("slowing down" canon, "collapsing tempo" *versus* uniformal line of the bell hits), layer duality (voice [M-line, realizing only melodic sounds] with counterpoint [T-line, realizing only chord sounds]), duality of horizontal layers (bell versus string orchestra; triangles *versus* line), duality (separation) of sound in the finale (breaking strings as an "object", resonance of the bell as its "shadow"; The "freezing" of the chord sound and its "flying away"), the dualism of generative elements (algorithmic, structuralist) juxtaposed with the free element (arbitrary, "musical"), the dualism of elegiac and optimism, and finally the duality of tension-relaxation and tension-holding as

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[516] This point is basically point VI of Godøy's way of studying gestures.
[517] L. Zielińska, *Teoria trójkątów…*, *Op. Cit.*, p. 58.

the two main gestural categories of almost the highest order (I think, the highest order is the work itself as a whole and the gesture that the composer wants to perform with it).[518]

This dualism is one of the ideological foundations of Pärt's compositional technique, which is to symbolize the spiritual dualities connected in one man – mortality, transience, changeability juxtaposed with the eternal, established order. The composer himself describes it as follows: the M line "always signifies the subjective world, the daily egoistic life of sin and suffering", the T line "meanwhile is the objective realm of forgiveness".[519] This dualism is transcended by the unification of the contradictioal elements in a single form and a uniform process, just as man unites body and soul, so it is a clear reference to the theological thought (including the theology of visibility and invisibility) as well as the aesthetic (proportion of numbers, *ars bene modulandi*) of Augustine of Hippo.

There are many elements in the work that can be interpreted using a rich treasury of established rhetorical figures, affects and musical symbolism: modus a aeolian, the only one used in the work, Wolfgang Caspar Printz describes as a scale "nice and somewhat sad", while Johann Mattheson affectively describes the tone as "somewhat regretful, venerable and calm, inviting to sleep, but not unpleasant";[520] elsewhere the features of the modus are emphasized, such as Like: feminine, graceful, delicate and soothing, in which pious feelings are mixed with pious resignation, most effective for exposing silence, melancholic.[521]

Due to the adopted 6/4 meter (due to the stratification into duple and tiple, there is also a rhetorical difference – duple are treated as joyful, triple as at least serious, if not sad) and the characteristic rhythm of the half note-quarter note (jamb and trochee are perceived as joyful, dance rhythms, due to the iconic comparison to the swaying human figure, also to the pulse of dance), On the one hand, it brings to mind the monotonous step *conductus funebris* (steady step), but also *hoquetus* techniques, symbolizing crying and sobbing (through the iconic mediation of the appearance, rhythm and configuration of the posture of the sobbing person). The Picardy (because that's how I treat the audible 5th partial of the bell) ending of the piece is also traditionally associated with an optimistic, hopeful ending of elegiac dramaturgy in the expression of the work.

A number of others can also be distinguished: *anticipatio* (overtaking the consonance in the crystallizing chord in A minor weakens the target consonance), ἀποκοπή [*apokopέ*] (incompleteness of the theme is expressed by truncation, unfinishing), *ἀποσιώπησις*

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[518] Hence I derive a similar zone theory of gestures from the zonal theory of time. *Vide:* Chapter 2.3.2.4.
[519] P. Hiller, *Arvo Pärt, Op. Cit.*, pp. 96-97.
[520] A. Kisiel, *Koncepcja retoryczna „Pasji według św. Mateusza" Jana Sebastiana Bacha*, Poznań, 2003, p. 101. [translation after Kisiel done by myself].
[521] M. A. Ishiguro, *The affective properties of keys in instrumental music from the late nineteenth and early twentieth centuries*, 2010, p. 49, [unpublished work].

[aposiṓpēsis] (rupture), *asimilatio* (assimilation), *climax* (succession of successive steps of the scale as a ladder), ἔλλειψις [*élleipsis*] (the solution of the dissonance is not a consonance, but an emboss, expresses abandonment, a change of direction), exclamatio (finalises accented by a wide jump as exclamations), *fuga imaginaria* (solemnity, solemn pronunciation), ἔτερολῆψἴς [*héterolêpsis*] (crossing of voices by transgressions of the voice beyond the upper limit [ὑπερβολή [hy*perbolḗ*]], and beyond the lower limit [ὑπόβολή [*hypóbolḗ*]]), *interrogatio* (question suspended on the dominant symbolizing the lack of answer, rhetoric of the question), lines κατάβασις [*katábasis*] (the sensation of descending, falling, falling, dying[522]), *mutatio* (difference, contrast) – per systema (registers), *per motus* (tempo), νόημα [*nóēma*] (polyphony and homophony), παλιλογία [*palilogía*] (repetition as an expression of assurance of something), πολύπτωτον [*poliptōton*] (repetition in octaves as an expression of distraction), *repetitio* (repetition, attempts to achieve a result), *suspiratio* (sighs), *tenuta, prolongatio* (as a symbol of eternity, but also of sleep), *tirata* (as a special interpretation of the rapidly disappearing partials of the bell, symbolizing the tearing, released arrow from the bow).

The qualities and meanings represented by the indicated figures can specify the composer's intentions, very clearly suggest associations and an interpretative "path", in any case they certainly constitute an adequate description of the processes taking place in the work. Each figure of speech, due to its iconicity mediating the metaphorical character of communication, expressed in conventional dictionaries, is a gesture.

The symbolism, however, I do not have to distinguish using only *Affektenlehre* (which, helpful, does not age). Here it is necessary to redirect attention to the example of the symbolism of the bell. It carries with it a dialectic traditionally associated in the West with death or passing (probably due to its solemn, serious, transcendent sound, ritual and religious practice of application, as well as the structure in which the value of resonance is exposed). For the believers of the Eastern Church, and such is the composer, the sound connotations of bells are slightly different – just like in the Western Church, the Orthodox use the bells on the tower, as well as liturgical bells used for the service. However, unlike the Western tradition, playing these instruments has a convention of performance in specific rhythms and tempos (conventional patterns), with established theological interpretations (indicating, for example, the form of the service, the period of the liturgical year – during fasting, bells are replaced by silence or wooden knockers, etc.).

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[522] At the same time, these contextual distinctions are stored, for example, by French (similarly to English) – you can fall (*tomber*), collapse but also to fall in love (*tomber amoreux*). Most rethoric figures find no difference between artistic, linguistic and musical means. Intuitions expressed by sound signs can also be found in languages.

At the same time, as I have shown, the composer also established new symbolisms of bells along mimetic perception – the swaying rhythm, falling structures enclosed in triangles, corresponding to the envelope of the bell sound can resemble the experience of ringing bells placed in different topologies, observed from one point (polyphony) – but also observing the movement of bells on one tower – small quickly, larger longer, bells such as *Sigismund* Bell on Wawel Cathedral tower or *Tuba Dei* on Toruń Cathedral towerthe longest). So there is a parallel to the Grisey's time distinction: the time of humans (vno I) and the time of whales (*vno II, vle*, vc, cb) [523], or less convincingly perceptually: if treat the viola as an "objective" *cantus firmus* – then *vni I* are maintained in the time of birds (insects), *vle* – in the time of humans, *vc* and *cb* – during the time of whales. At the same time, in relation to bells, the process of building the culmination, culmination and ending can be included as a representation of the actual process of "ending" the ringing of bells, their inhibition, "folding" a specific entropy of movement, polyphonic, diverse, into a unified, homophonic process leading to the extinction of their sound.

Very characteristic is the gesture of the bell's "afterimage", used at the very end, composed of two elements: the acoustic ("visible") tone of the strings, and having a certain dimension of "invisibility", but also objectivity (resulting from the laws of physics) resonance revealing the harmonic partials of the bell, in a seemingly strictly structuralist composition. I think, and as I have shown in the previous section, it is safe to assume that the composer started from the bell gesture as a consequence of *attack-decay* when constructing the work (conceived as elegiac even before the coincidental moment of Britten's death), adjusting subsequent means of expression and technically organizing the structure of what the afterimage gesture prepares and introduces. Without this gesture, the idea of previously derived structural operations seems to be devoid of punchline and *gravitas*[524]. This gesture of afterimage can be interpreted in various ways, I am personally convinced by two: the breaking of communication between the layers existing so far together, although independent of each other – a string orchestra rupturing a long-held chors and hearing only the reverb of the bell ("mutilated" sound by exciting it *pp* with simultaneous dynamics of *fff* strings, perceptually devoid of attack (or at least schizophonic attack), and using Grisey's nomenclature[525]: his excitation and duration [of life], and with only resonance and extinction

[523] Therefore Relation of *vno I* opposed to Remained part of string orchestra can be specified as Relation of Figure to background: When listening to the next layers, the easiest way is „fish out" *vno I*; sometimes The ears impose themselves „Clearances" in places of weave as 2 measures before no 6.
[524] The composer's wife, Nora, also notes this fact: "he last chord of Cantus refuses to end; it stays there, without increasing or diminishing. It is something achieved and which no one wants to give up. **The substance of the entire work strives toward that point."** E. Restagno, L. Brauneiss, S. Kareda, A. Pärt, *Arvo Pärt in Conversation*, *Op. Cit.*, p. 39. Emphasis added by myself.
[525] *Cf.* G. Grisey, *Muzyka: stawanie się dźwięków*, [in:] *Res facta nova* 11 (20), Poznań 2010.

[death] [526]) – (1) as a metaphorical representation of the separation of soul and body at the moment of death, or (2) as a metaphorical representation that despite even a sudden (rupture) end of life (physical substrate, string orchestra as an "object"), Memory and soul remain and last (resonance, resonance, "shadow" of the object).

A reference, quotation, reference of a genre or style can also be symbolic. Tagg's typology will be helpful at this point. In *Benjamin Britten's Cantus in memoriam*, one can distinguish both (**6b) indicators of style** (idem *per idem*): "traditional, ancient, sacred" canonical techniques, characteristic of Western culture, and more specifically: since the time of Léonin and Pérotin; similarly, one can distinguish (**6a) synecdoces of genre** (*pars pro toto)*): the use of the bell and polyphonic techniques as an evocation of the ecclesiastical, sacred style (Palestrinian, old, and therefore potentially "alien" to the man of the twentieth century), juxtaposed with their "modernist" reinterpretation (modernization, bringing the twentieth century closer to man), sound, a certain disorder of the process (ordered not harmonically [so that the "voices" agree], but because of the process quality of the movement [almost "accidental" weaves of voices, aiming at arousing the maximum tension]).

The very establishment of objectified, algorithmized *speculand musicae* as superior ways of organization in a work based on intellectual operations is itself symbolic – the layers of the canon (not only temporal, but also contrapuntal) constitute a kind of *homage* to the thought of Augustine of Hippo, or the spherical concept of Boeocius, both in terms of distinguishing audible and inaudible acoustic categories, Sphericity as a specific gravity of various categories of sound, as well as the search for harmony as a coexistence of body and spirit. Many other layers of meaning can also be sought, such as the symbolism of number, proportions, but at this stage, one can get the impression of a certain clarity, desired in a scientific text.

Using dualities on many levels, Pärt seems to be expressing some theological truth, if not a general humanistic or metaphysical one. Due to the composer's religiosity and attachment to Christian values, I allowed myself to choose fragments of Psalm 30, which corresponds to the structure, expression and meaning of the piece:

> "I praise You, Lord, because You have saved me and have not allowed my enemies to mock me. [...] My Lord, my God, out of the land of the dead You brought my soul and saved my life from among those who go down to the tomb. [...] **You turned my**

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[526] Birth is imperceptible, death is second, both clearly marked; and the third, ephemeral, transcendent duration. This juxtaposition alone generates semiotics and symbolisms, founded in the Western cultural sense along semioses – object and shadow, birth, life, death, soul and body, visible and invisible, material and immaterial *etc.*

mournful lament into a dance, You untied my penitential sack, You girded me with joy, **so that my heart would not be silent and sing a psalm to You.**"[527]

In this quote, the last riddle of this work is solved – the *Cantus* from the very title. Probably coming not only from the *cantabile* value of parts (although, after all, these are scale processions, the expressive rhythmic and dance contour encourages to hum by self), or the archetype of *cantabile* and clarity that Pärt found in the style of de Machaut or Britten. Not only because of the rich history of the elegiac style as primarily the genre of funeral songs, in the current of which many works of the most outstanding artists were created. Not only because it contradicts the sound "content" of the piece, which lacks words or chanting. Not only because the polyphonic layers can be compared to the Grisey's singing times: of birds, humans and whales (although, I think, it is unlikely that the composer living behind the Iron Curtain will be "heard" by compositional novelties from the West). Not only from the name *of the cantus firmus*, a polyphonic technique that would be so appropriate if one melodic structure were distributed at different times as a work process. Also because Pärt's plausible theological interpretation can identify the whole of human life, in all its aspects, with the constant hymn of praise to God, the best Creator, who understands all creative orders.

In this way, Pärt makes a gesture of synthesis of dichotomy – merging into one organism – with his whole work. [528] And as many dualities will be, so strong will be the syntheses: the bell layer (super-stable materially and formally, though rough, metallic) and the strings (materially and formally unstable, though soft, velvety); T-lines and M lines as inseparable processual lines constituting a single layer; clear, separable process phases smoothly morphed into one monolithic whole.

This is how one could conclude elegant, academic interpretation of *Cantus in memoriam Benjamin Britten*. But there are also others, examples of which I will mention. It is possible to change various parameters (pitch, harmonic, contrapuntal, topological parameters) in continuous numbers and on their basis carry out statistical research, graphic mapping, but also generate further data based on them. It would be possible to conduct research on changes in the recipient's body, made with medical devices that capture, for example, brain waves (and generally the activation of brain areas) or other changes in the body (e.g. thermal, chemical) and compare them with the course of the piece. Cultural and sociological statistical research can be carried out – who hears how and what (depending on competence, provenance, enculturation, etc.), attempts at objectification (e.g. by drawing

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[527] Ps 30:2; 4; 12-13; *Psalm 30* transl. L. Stachowiak, A. Jankowski, [in:] *Biblia Tysiąclecia*, Poznan, 1999. [translation after Stachowiak done by myself].
[528] Nora, Pärt's wife, even concludes the synthesis of the voice M and T as the equation 1+1=1; P. Hiller, *Op. Cit.*, p. 60.

curves, as in Truslita), and studies of the diversity of references in intercultural relations. One could study from the perspective of biologists, medics, psychiatrists, mathematicians, etc. And certainly the research would reveal further layers of gestural internal and external relations. [529] Each of these teachings has its own system of signs, contexts that make it possible to push infinite semiosis into completely different areas.

I, having experience founded on knowledge and skills of music and humanities, chose such a natural direction for me (available conceptually). Its adoption results, of course, in the first place from the perception of the strategy of semantization adopted by the composer in shaping the communicative character of his work. All the more so with the use of other strategies – visualization or theatricalization, it would be necessary to access other sign systems, under the threat of losing the availability of some gestures.

In this sense, the researcher must be competent – the recipient do not have to. What I have included in almost 30 pages, and the composer has written out in 108 measures, on eleven 5-fiveline in the system – recipient synthesizes in 6 minutes (and *post-factum* reflection based on the mental "reproduction" of auditory, concert experience), although he is probably not conscious, he senses the quality of what has happened and calls his categories. The study of reception and perception would allow to capture to what extent naming discrepancies are successive semioses.

> "It is astounding that a musical work like this is possible, simultaneously active and still, simple and complex, naive and profound. But with Part's language and sensibility, this is all possible."[530]

4.3. Observations in the margins of the analysis and interpretation of *Cantus in memoriam Benjamin Britten*

Only making a very accurate, painstaking analysis and interpretation of the work in terms of the presence and quality of gestures revealed a number of problems. This piece, one could say, is created almost for this type of analysis and interpretation, in fact every thing in it is gestural, or at least encourages gestures.

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[529] An example of such an analysis is the study in terms of revealing the proportions of the "golden mean" in the work. *Cf.* A. J. Ballinger, *Proportion Canon and the Golden Mean in Arvo Pärt's Cantus in Memory of Benjamin Britten*, [in:] *Internationa Journal of Humanities and Social Science*, vol. 7, no. 5, May 2017.

[530] A. Marx, *Sublime Stillness, Day 3 – Bonus Double Post Cantus In Memory Of Benjamin Britten By Arvo Pärt And Symphony No. 3 By Henryk Gorecki,* 06.04.2016, [source:] https://smartandsoulfulmusic.wordpress.com/2016/04/06/sublime-stillness-day-3-bonus-double-post-cantus-in-memory-of-benjamin-britten-by-arvo-part-and-symphony-no-3-by-henryk-gorecki/ [Accessed: 01.05.2023].

(1) There is no denying that "catching" gestures is more difficult in the case of many other works – often gestures are much more veiled. Sometimes elements at a very low level are read as structures, and by observing their dense complexes, by implication, they allow you to return to them and give them the rank of a gesture. This is often elusive either because of the "smallness" of the gesture or, on the contrary, its extension – these scales often require the reconstruction of intermediate levels, without which communication would not be possible. This could therefore suggest, so to speak, the "far-fetched", "paper" character of gestures. But maybe it's just pointing to an ignored grammar of listening.

Gestures, being basically immaterial, although expressed in a quasi-material form (sound, physical movement), or causing (quasi)material effects (including psychophysical reactions), do not depend on the score, nor on hearing or perception, nor on objectified research. All these elements (and even more) must be treated together.

This is the difficulty of capturing, but also effectively creating gestures, which is aggravated by the fact that one gesture sometimes results in very complex grids of subsequent ones, correlated with each other. While the initial history of gesture semiosis can be traced quite easily (assuming that the hypothesis of precultural archetypes is true), multi-storey assemblies for reasons of direction and individuality of reception already make it impossible. In a sense, it resembles *circulatio*, wandering around concepts, looking for signs of signs, or effects that are not possible, or, so to speak, the sense to "arrange" in order – for example, in what hierarchical relationship are the gestures of style. Capturing the connection of gestures with each other, finding their original core is possible first of all thanks to the analysis and interpretation of psychoacoustic stimuli, and then using the pragmatic maxim and Peirce's infinite semiosis. This confirms the zonal hypothesis of gestures – the basis of hierarchy both vertically and horizontally.

(2) The processuality of gestures does not consist in the transition or shift from point A to point B, but referring to Hugues de Saint-Victor, it is a **multifaceted, qualitative figuration, with internal and external vectors**. So the gesture can be easily lost if any of the smaller elements is deformed. [531] Too loud hitting of the bell, audible in advance before the gesture of rupture, destroys the entire sensational effect of the afterimage gesture. The reading, I think, consistent with the composer's intention, and described in this work, reaches about 11 out of 20 compared recordings. [532] Thus, almost half of the recordings lost the

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[531] Although this deformation leads to the formation of a new gesture.
[532] Among the recordings realized, I think, the intention of the composer was respected especially those conducted by m.in: Edward Gardner, Ola Rudner, Jean-Jacques Kantorow, Paavo Järvi (although not in all his recordings of this work).

quality of the gesture, blurring or preventing full "access to the presented world", and thus interpretation for the recipients.

(3) Analysis of *Cantus in memoriam Benjamin Britten* revealed the **fluidity of transitions between types of motions, gestures, between signs, between meanings, and thus generally understood extensibility or flexibility of gestures**. This feature mainly affects the sphere of gesture communication. Clarity in Pärt is not only the clarity of the algorithmic structure of canonical polyphony, but the expression of a message through a structure.

From the juxtaposition of gestures in the piece with the categories of Tagg and McNeil-Zhao, it can be seen that many gestures simultaneously perform several levels of communication functions. The same gestures, as individuals, can be read at least at iconic and metaphorical levels, or even emblematic, i.e. morphological, semantic and cultural. This is the communicative "openness" of the system – certain facts and ideas are communicated "objectively", without forcing the recipient to have to assign meaning to them (if he does not want to), if they only legibly refer (effectively surprises) to cognitive mental processes (e.g. refer to kinetic or sensory experiences) – in this sense, the "softness" of the strings and the "metallicity" of the bell can be treated in meaning, e.g. as a juxtaposition of the dualism of the orders of sin and grace (as the composer would like to), or simply as a reference to communities of tactile experiences. In both cases, the quality of the process, direction and *gravitas* of the motion of sounds will be described in the same way (or at least similarly, due to the assumption of subjective objectivity of individual perception and concepts such as the Auditory Stage), although each of these functions reveals completely different layers of possibilities for reading the work.

Gestures-emblems according to McNeil-Zhao and corresponding to the processes described in the earlier categories always constitute a higher level of gestural complexity. Therefore, gestures of the lowest level always maintain a certain mimetic compatibility – iconic and metaphorical, the complex ones either move the gesture in infinite semiosis or produce the gesture as a completely new value. The only important thing is whether at the junction of all sources of cognition of a musical work, especially perception, one is able to make a connection.

In a way, on the basis of assigning gestures to the communicative functions they perform, it allows for the "clarification" of the objective "world represented" of the work – respectively the temporal structure, spatial structure and dramatic (process) structure – but the very awareness of the possibility of reading them at various levels (and the complication of this reading). The disclosure of multi-layered processes of shaping gestures reveals that

not only they are conventional due to the fact that the composer gave them a meaning shaping the dramaturgy (process) of the work, but on the basis of the rules of meaning, the recipient himself can give them meaning at various levels (including conventional).

It is not uncommon that the very naming of gestures already causes the impression that it implies semanticism. In Pärt's case, the reading of dualistic orders, interpreted (as a further deflection of semiosis) as a representation of sin and grace, can result almost exclusively from knowledge of his technique and statements or writings concerning it. However, this does not prevent us from seeing that such dualisms occur, determining their nature, "grammar", mechanisms and general perception as motion of sounds.

In this sense, there is a "shift" of the rules of sense of reading gestures in their structure, a kind of test of hierarchical reduction from lower levels to higher levels, because only these higher levels of gesture composition reveal their proper sense and allow accurate reconstruction of the composer's intentions and the possibility of attributing relational features to them in a semantic edition. The reduction test would therefore confirm the intuition about archetypal (also precultural) forms of gesture.

In this work, using Lehmann's conceptual nomenclature (sound structures are clearly a medium for expressing the composer's concept), the semantic strategy of relational music is implemented above all (already at the level of the title, but also of the whole process and the gestures that create it). We will not find in it shaped relations through visualization (lack of video and other means of promediating movement in "virtual space") or theatricalization (lack of readable performative movement promediated in the same physical space in which the acoustic space of the work occurs). All movements are strictly sonic, they do not contain their performative counterparts – although the musicians, through choreographically determined changes in the instrument interface, transform their movement gesture into the movement of sounds, this is not the target (perceivable as a separate) function within this work; Despite this, they have their own networks of meanings and associations – both semantic and cognitive.

None of the performers, let alone the listeners in the piece, collapses (by some irrational flop) to illustrate it, to communicate it, despite the fact that the perceptual perception of the kinetic properties of the process would indicate a sense of "collapsing". The gesture of afterimage – composed of a layer of breaking the sound by strings and the "reverb" of the bell's partials, at the same time breaks with the traditional sense of the need to "end" the work – the emphasy of communicating with the long-term enduring of the final chord is broken by the "resonant" transience, as if two forms of ending were included in this work, as if it ended with a solution to the sixth degree, in addition to *Hochpunkt* of the whole work.

In this way, Cassirer's pattern of thinking is revealed in functions – what evokes psychophysical reflexes in me (a sense of collapsing – a signal), and what evokes reflexion in me (symbol), which mediates in expression and communicates directly to me (comprehensible iconic similarity of the sound of the bell gesture and the afterimage gesture, My-you), which mediates the symbol and communicates to me indirectly (comprehensible metaphorical similarity between the bell gesture and the self-reproducing gestures of strings, You-it), and what is a matter of mediation in dictionaries of symbols, conventions, systems (similarity of the bell gesture structure to the symbolism of death and the passage of life, it-to-it). [533]

(4) At some point, the interpretative process lowered the complex value of the gesture – the analysis going in a semantic direction pushed the gesture onto specific tracks (marked by culture), from which it is not easy to get out and easily be "cornered". In this sense, the gesture was more satisfying at the level of describing the perceptual experiences themselves, as it were, "speaking without speaking". **"Domestication" in convention, meaning, language, culture has become the imposition of a straitjacket, a unification** resulting from the game of deaf telephone.

The intelligibility, clarity, self-imposed (cultural) of the reflexive understanding of the meanings expressed in symbols (even if not quite consciously) is at least a fascinating feature, and when juxtaposed with an attempt to describe them in words, it falls poorly – weakening their value sounds naive. Semantic interpretation "sealed" the feeling, directed it into one path, while perceptual analysis and interpretation opened up many possibilities. In this, I think, there is a Herderian distinction between the preservation of objective structure, but also the necessity of "fortune telling" by the translator, in this case the analyst and interpreter. The thin, fluidized boundary between what is interpretively objective (intended by the composer, measurable, grasping) and what is subjective (depending on one's own perceptual image) does not make this task easier.

At the same time, the possible versatility of the shot only shows the nature of the gestures. Penetrating into various meanders of morphology, structures and perception of reception convinced me that the iconic-metaphorical arrangement adopted by Pärt in the work should refer more to the representation of human life by means of the metaphor of ringing bells, than that it is any other iconic-metaphorical representation, e.g. on (adopted in my *visibilium et invisibilium* as a basic gesture) friction of matches, but also continuous movement, repeated (intermittently), until the goal ("ignition") comes true. The fluent

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[533] This is where the contradiction between Cassirer's thinking and Tagg's thinking is revealed. The second mentioned places all these things in the category of a symbol, as opposed to the first, which would describe these issues as signals.

contextuality of the grammar of listening, based on strictly implemented intentions resulting from compositional grammar, is therefore everything.

(5) From this source he draws another conclusion: the **gesture contains everything it needs, spherically permeates and surrounds both the presented and the actual reality, knowing how to contain it in the imagination**. In Pärt's work, at first glance (and ear), one can say about communing with an autotelic work, penetration into the contexts of creation and technique makes us aware of heterotelicity, and ultimately in perception itself there is a real polyphony of both experiences and meanings – confirmed on many levels. Communication is carried out on different levels – for some it is enough to experience *vortex*, space, others other, more complex psychophysical experiences, and others cultural, mental and symbolic experiences. The possibility of perceiving the internalization of external phenomena into musical and externalization of musical phenomena into external ones is not only creating a mental "shortcut" through which one has access to concepts, but it can resemble the experience of "building" a coherent world – as in Bruckner's *Ur-Nebel*[534] category, the separation of the world from the darkness of the forefog.

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[534] B. Pociej, *Symfonia*, [w:] *Ruch Muzyczny,* XXXI, nr 5, 1987.

Conclusion

The conclusions drawn during the reflection on the analysis of Arvo Pärt's *Cantus in memoriam Benjamin Britten* formed almost by themselves into the structure of the theorems about the gesture of Gilles Châtelet, a presemioticist, a mathematician who captures formulas in the magma of philosophical observations. Let the harmony of my intuitions described in this work and the statements of the philosopher be expressed in recalling them and serve as a *finis, qui coronat opus*:

(1) "the gesture is not substantial: it gains amplitude by determining itself. Its sovereignty is equal to its penetration and that is why we refer the gesture's 'accuracy': the precision of the strike is proof of the reverberation of its skill. The gesture inaugurates a family of gestures, whereas the rule only enunciates 'instructions', a protocol for decomposing the action into endlessly repeatable acts. The gesture possesses a historical exemplariness: if one can speak of an accumulation of knowledge over the course of successive generations, one should speak of gestures inaugurating dynasties of problems;

(2) the gesture is not a simple spatial displacement: il decides, liberates and suggests new modality of 'moving oneself'. Hugues de Saint-Victor defined the gesture as 'the motion and figuration of the members of the body according to the measure and modalities of action and attitude'. The gesture refers to a disciplined distribution of mobility before any transfer takes place: one is infused with the gesture before knowing it:

(3) the gesture is elastic. it can crouch on itself. leap beyond itself and reverberate. where the function gives only the form of the transit from one external term to another external term. where the act exhausts itself in its result. The gesture is therefore involved with the implicit pole of the relation;

(4) the gesture envelops before grasping and sketches its unfolding long before denoting or exemplifying: already domesticated gestures are the ones that serve as references;

(5) a gesture awakens other gestures: it is able to store up all the allusion's provocative virtualities. without debasing it into abbreviation."[535]

Clearly outlined is thinking in categories of Peirece's semiosis, where one can infinitely generate successive character translations of the source object and its pragmatic maxim, where the effect already implies the object. Hence, gestures as possible to generate

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[535] G. Châtelet, *Figuring Space. Philosophy, Mathematics, and Physics,* transl. R. Shore, M. Zagha, Dordrecht, Boston, London, 2000, pp. 9-10. Footnotes in square brackets own.

ad infinitum do not have their own directories or histories. The very possibility of deformation (e.g. by performing a musical work contrary to the author's intentions) creates a new, different gesture, testifying to the general feature of flexible gesture mobility.

The means of gesture study – a topological diagram, a score, a sonogram, the study of brain and bodily functions – can "freeze the gesture" long before it becomes a sign perceptible to the mind. [536] As a presemiotic, Châtelet explicitly opposes the "semiotic" source of gesture expression: "The referential arrow of pointers that characterize semiotic signification are not yet activated, gestures do not hit and prick their targets, but envelop and sketch. They are ontological sketches of processes and facts." [537] All this makes the gesture more like a living being or even a society than a structure that represents it.

Thus, *au cœur de la création*, the gesture appears to me as:

(1) A synthetic phenomenon, not only because of its internal multilayered, unifying value, but also its external – hierarchical, multimodal – as complexes establishing a bond between elements inside and outside the system of signs (intersemiotic translation, pragmatic maxim, preposterity), between experiences (synesthesia, audiovisual contract, added value, effective amazement, experience in embodied cognition). It is therefore a good touchstone of what Lutosławski postulated – a quality of structure (in this case, metastructure) that will not be perceptually indifferent. [538] On this grounded hypothesis about archetypal forms of gestures, or the hypothesis of zonality of gestures allows metaphysically to look both beyond the horizon of the mechanisms of a musical work, but at the same time to penetrate oneself into the mechanisms of perception – through infinite transformational sequences (generation and modulation) of gestures, *sui generis* objective and subjective at the same time – as in the famous anonymous astronomical engraving in *L'Atmosphere: Météorologie Populaire*;

(2) "energetic shaping through time". In a sense, this metaphor of Hatten is an archetype, a topos that, like a myth, happens always and everywhere, and which has detached itself from its original, conceptual background and moves its own

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[536] *Cf.* G. Mazzola (ed.), *Op. Cit.*, p. 862.
[537] *Ibid.*, p. 863.
[538] "[...] There is no single move in music, even the simplest, and therefore not even an interval understood vertically or horizontally, or rhythm, or timbre, or even the smallest element of music, that would be indifferent from the point of view of expression. Actually, I only always knew with certainty and very little else," statement of 1980 [in:] L. Polony (ed.), *W. Lutosławski*, [in:] *Zeszyty Naukowe Akademii Muzycznej*, Kraków, 1985, p. 177. "To me, however, one thing is undeniable: no pitch sequence, no sonority can be created without taking into account details of expression, color, character, physiognomy. Even the tiniest detail must satisfy the composer's sensibilities to the greatest degree. In other words, in music, there can exist no indifferent sounds ", B. A. Varga, *Lutosławski Profile*, Londyn, 1976, p. 23.

258

way. [539] At the same time, like a myth, this movement has its two alternative traditions – about the internal or external nature of musical movements – and has its own, often zealous, followers and representatives. Due to the strength of these beliefs and their proponents, it is easy to trace in the history of music those periods in which one version dominated and in which the other dominated, often being associated with other aesthetic disputes – about "absolutism" or "programm" of music, structuralism or relationality and many other detailed solutions: *Affektenlehre*, serialism, spectralism (understood in the temporal trend – as the process of "birth", "continuation" and "death" of sound);

(3) Gestures are therefore something more than the fulfillment of the "mesosphere" in the analysis, between the macro- and microstructure – as speaking more precisely about the "content" of music (even the most abstactive – reifying, animating, and sometimes even anthropomorphizing or posthumanizing) – and at the same time opening the field for interpretation. The gesture opens the reality presented in the work not only to actual, imaginary (virtual) realities, but also to other presented realities (diegesis). It is a possibility of a comprehensive explanation of sound phenomena both for those who oppose and agree to the participation of "emotions", "meaning", "external expression", or "embodiment of experiences", "evoking" in music. They are, therefore, something that is better to "feel" than to "explain",[540] because all translation deforms and shallows, requires the mediation of the sign. Gestures, for their part, can be perceived both pragmatically, idealistically, performatively and abstractly – and these are not separate or opposite methods, but complementary images of gestures. Maciej Zieliński, an outstanding theoretician and philosopher of law, once[541] presented his concept of the ontological nature of the legal system, through the metaphor of a puzzle – already set, admittedly, but set with the image to the bottom. By removing one of the puzzles, the participant of the system receives a fragmentary image, can put it down, choose another one and try in his mind to visualize those puzzle *memory* that he has already discovered, and try to mentally "reconstruct"

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[539] *Cf.* C. Levi-Strauss, *Structural Anthropology* transl. C. Jacobson, New York, 1963, p. 210.

[540] E. Hanslick, *Op. Cit.*, p. 86.

[541] June 24 2014, during the Conference *Wykładnia Konstytucji: praktyka i teoria* dedicated to a Sławomira Wronkowska, taking place at Collegium Iuridicum Novum in Poznań (Faculty of Law and Administration AMU). In his concept, Zieliński refers to his own, unique derivative concept of the interpretation of law – referring to Chomsky's concept – the process of learning the deep structure of law (norms, rules) which the legislature expressed in its expression in the legal provisions (regulations as article etc.) forming the surface structure of the law. Therefore, the maxim *omnia sunt interpretanda* (related to this Poznań-Szczecin derivation concept, and attributed to Zygmunt Ziembiński) is contrasted from this point of view with an erroneous paremia *interpretatio cessat in claris* (related to Warsaw school of jurisprudence). Hence, musical gesture, read in the spirit of Chomsky's generativity, will always demand a constant renewal of interpretation, even if it seems that there is widespread clarity about the reading of musical works. *Cf.* M. Zieliński, *Wykładnia prawa: zasady, reguły, wskazówki*, Warszawa, 2017.

what may be waiting underneath – in addition, as it would result from logical necessity – a dynamic, transfiguring, multicolored picture. A similar system is musical art as a field of culture, but at the same time sensual experiences. The gesture transcends these opposing categories. It is an open system, generated *ad infinitum*, impossible to catalog, although it allows to penetrate into some of its regularities by learning compositional grammars and listening grammars. The gesture seems to reveal the answer not to the question "how?" but "why?"[542] (and various layers of these purposive motivations) and discover for the recipient at least a part of the aforementioned ontological puzzle *memories*. At the same time, it is a "way" to implement Grisey's postulate: "No more composing notes, time for composing sounds",[543] also supplemented by Kreidler's: "I no longer compose with sounds, but with music".[544] Gesture, in my view, is what Lachenmann encourages when he says "to compose means to build an instrument",[545] or what will remain of the operation that Filidei inspires: "imagine music that has lost its sound element";

(4) Gesture, I think, can be used retroactively, *ex tunc*, not limited to the Western civilization, because it exceeds other categories known to Western music theory (e.g. motif, phrase, sentence, rhetorical figure, etc.), being objective and at the same time subjective, anchored in perception and playing in the "deaf telephone", or being ontologically something much more than just a purely procedural-structural or purely relational. I think that any music created must be gestural. Gestures synthesize many positions or categories previously perceived as

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[542] Górecki appealed for a change in the paradigm of the question by music theorists and musicologists in this form, which I took deeply to heart and remembered many years ago, although I did not manage to find the source (interview, statement) in which this proper, remembered observation is made while working on this text Composer. I found a statement quite close to it (as to the spirit): **"I see how the music is made, I see its individual elements, but I don't know where it came from or why [...] I want to see the world with my own eyes, not someone else's."**. *Cf. Cf.* H. M. Górecki, *Powiem Państwu szczerze*, [w:] *Vivo*, 1, Kraków, 1994, p. 44. [translation after Górecki done by myself]. *NB* Most often however He put this appeal into practice, which manifested itself especially in those when explorer he asks Gorecki very Specifically sometimes presenting very specific interpretations of his works this and then he gets from an adversary Extended stories, Digressions, often complaining: about God, About the Pope, about Chopin, about Szymanowski, about mountains, about identity, on politics, about the collapse of civilization etc.; Sometimes also less emphatically appealed for composing "music, not notes", though it seems not Understanding it in the same way as Kreidler. How I think It was also reflected in the helplessness of verbally expressing some of his expectations As for implementation Its own Music (As he recalls Antoni Wit his conversation with Górecki: „«Too fast?» – «no»; «Too slow?» – «no»; «Too loud?» – «no»; «too quiet?» – «no». «So what?» – «Aaah, leave me alone»). *Cf.* B. Bolesławska-Lewandowska, *Górecki. Portret w pamięci*, Kraków, 2013, p. 232. [translation after Wit done by myself]. By the way – about Bruner says: " There is something antic about creating, although the enterprise be serious. And there is a matching antic spirit that goes with writing about it, for if ever there was a silent process, it is the creative one. Antic and serious and silent. **Yet there is good reason to inquire about creativity, a reason beyond practicality, for practicality is not a reason but a justification after the fact. The reason is the ancient search of the humanist for the excellence of man: the next creative act may bring man to a new dignity**", J. S. Bruner, *Op. Cit.* p. 34.
[543] G. Grisey, *Les Espaces acoustiques, [in:]* G. Lelong (ed.), *Écrits ou l'invention de la musique spectrale*, Paris, 2008.
[544] J. Kreidler, *Muzyka z muzyki*, transl. Monika Zamięcka, [w:] *Glissando*, nr 22, 2013.
[545] H. Lachenmann, *O komponowaniu*, transl. M. Hermann, [w:] *Glissando*, nr 4, 2005, p. 39.

separate, contradictory, and even adversarial ones. In my opinion, therefore, the musical gesture is a form of musical universalism[546], even if it remains widely underestimated, unknown, unnoticed. I'm not saying it's a general theory of everything, like Kircher's magnetism. His approach to music as magnetic is rather influenced by magical-ritual thinking, although it is an attempt to penetrate the meanders of perception.[547] As Aristotle says: "That which has no end [perfection, realization, fulfillment] shall in no case be complete [perfect, finite, complete, fulfilled]; And the goal is the border." [548] I see gesture as a form of something that gravitates simultaneously towards being τέλειον [*téleion*] and which seems to have *τέλος* [*télos*].   The gesture is certainly a form of searching for "one hermeneutics with common principles", about which Moraczewski writes when reconstructing Herder's attitude towards idiosyncratic sensual shapes in sound art, although I do not think that it is some kind of "Holy Grail".[549] The commonality of these principles results from the perspective of the transdisciplinarily studied antisystematization weave. Amazingly, indeed, "this hermeneutics covers the entire field of art" – it is convenient in describing music in contact with different poetics of other systems of experience, but also media. Perhaps I am not inclined to categorically[550] claim that "there are no artistic statements that are not subject

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[546] *Cf.* A good example is Xenakis distinguishes the attitude of "technocrats" (who see an opportunity in the theory of information and the generally understood "communicativeness" of music, reduced to linguistics) and graphic and performative (happening) "institutionalists" fetishizing, according to Xenakis, ways of structuring music external to music. Basically, it reduces both types of reasoning to "romantic" thinking. He contrasts it with his own, stochastic (algorithmic), metamusical thinking – restoring, in his opinion, true sensual sonically oriented hedonism. So, I think, therefore Often gestural thinking is stereotypically associated with the "programming" of music, representation, dramaturgy in the "old type", which is contrasted with a "new type" of thinking about music, often structural, although based on the desire to search for "hedonistic" (perceptual) values, cognitive?). Deduction of Xenakis It is therefore only part of the dispute between relationality and structuralism and can be reduced to a criticism of the form of communication. Ultimately, the goal is perception, although understood in very different ways. *Cf.* I. Xenakis, *Towards a Metamusic*, [in:] *Pace*, No. 93, Cambridge, summer 1970.

[547] Kircher's perspective, on the one hand endearingly speculative (often based on interpretation and his own imagination), and on the other hand, highly sensitive intuition, sensing the meanders of science worth investigating, as to the proper nature of music as a magnetic phenomenon expressed in the otherwise gestural concept of tarantism, I touched upon and presented in more detail in my master's thesis. Music as an energetic vibration moving through the air and affecting all human sensuality, with all the consequences of adopting this perspective, is surprisingly consistent with the approach expressed in this dissertation (*Cf.* A. Kircher, *Magnet sive De Arte Magnetica Opus Tripartitum*, Rome, 1641). All of Kircher's other interests in music – including its theoretical approach (scale, counterpoint, instrument studies, etc.) or the significant codification of affect theory (*Musurgia Universalis, sive Ars Magna Consoni et Dissoni,* Rome 1650), as well as the reflex to examine the acoustic perceptual properties of sound (*Phonurgia Nova, sive Conjugium Mechanico-physicum artis et naturae paranypha phonosophia,* Campidonae, 1673) – seems to be only taking different perspectives of one bothering problem. Hence, I see Kircher's entire oeuvre in the field of music as a uniformly directed attempt to explain the complexity of music with a unified theory of everything. *Cf.* D. Puk, *Gest muzyczny…*, *Op. Cit.*

[548] "τέλειον δ' οὐδὲν μὴ ἔχον τέλος, τὸ δὲ τέλος πέρας". Arystoteles, *Fizyka*, III, 207a, 14 [after:] D. Mrugalski, *Eschatologiczna niepoznawalność istoty Boga: próba przekroczenia metafizyki Arystotelesa w ujęciu Grzegorza z Nyssy i Tomasza z Akwinu*, [in:] *Przegląd Tomistyczny*, t. 25, 2019.

[549] The mythical grail is supposed to be one, gestures whereas are numerous, concretized, individualized and diffuse.

[550] I am not inclined to say so categorically and to take and obtaining results from comprehensive research, signaled in this dissertation, which would verify many of the theorems and hypotheses cited here – such as ethnomusicological research on the perceptual-conceptual understanding of sound movement and defining communities of experience and semiotics.

to it", but gesture as a category in this direction weighs heavily – it is a category that unites, agrees and puts many musical (and especially compositional) phenomena in a new, and at the same time so natural, almost biological light. It does not create conceptual barriers (due to the proper lack of a top-down methodology and "rotating" meaning), but it creates a reconciliation bridge for perceptual barriers, even if all of them cannot be reconciled. Often the gesture seems to be a good (and sometimes the only) point of "attachment" in the analysis of works, especially the so-called "new aesthetic turn", in relation to which only "poetics" and methods of analysis (Cook's "structurally informed") are being created. At the same time, due to its "rotating" meaning, it can be a footbridge agreeing both in the sense in the context of contemporary achievements of knowledge and experience (noticing traditionally ignored layers in the work, and possible to read it in the perspective of , for example, cognitive or statistical), and reading the latest works, techniques, trends and currents present in the work (read in the perspective of evolutionary historical continuity – e.g. issues of the psychology of perception).

(5) When I think of the musical gesture, I am deeply convinced that it is not just a linguistic, theoretical or analytical category, but that it is a concrete way of understanding the nature of the musical movement, unifying, reconciling two main, separate traditions of perceiving the nature of the musical movement. At the same time, it is an invitation not to stop at this musical movement, as Hanslick did, as a mysterious phenomenon from which we are able to grasp only its general idea, but opens the door to much further considerations. One still has to wonder if the gesture is not a humanistic controversy, looking multi-layered, hierarchically complex, but in fact being a flat ontology for the sake of research, but also for the creation of music? Although it is part of the battle for the so-called non-atropcentric aesthetics, [551] although it jumps over problems such as the dualism of linguistics and materiality, is there not a likelihood of it leading astray? [552] Any directions of further research indicated on an ongoing basis in this work will verify this question, the answer to which I am rather enthusiastic;

(6) Gesture is a special form of communication between the creator and the recipient through the performer. Each of these entities not only requires skills essential for

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[551] Gesture man-made, Even using Flusser's multimedia "prostheses", combined is not only with its objective dimension (including very traditionally understood physicality) and semantic, but also with awareness, the purpose of its execution. Whether genuine could the gesture be of non-human origin? Whether *AI* (for now) not having a body and sensual capacities (including also those specific as effective surprise or embodied cognition) It can generate a real musical gesture that would testify to its true musicality and even its ability to build musical metaphysics?

[552] A. Skórzyńska, *Op. Cit.*, p. 162 and next.

their profession, *technē*, but also a kind of "empathy" in order to convey the gesture in a relatively lossless, explicitly way using specific tools. The question of perceiving a gesture, so to speak, comes down to this psychic skill, "empathy." For, I think, the main feature of a craftsman who aspires to be called a composer is not the mastery of all techniques, the exploration of infinite layers of imagination in their generation and transfiguration, consistency in the implementation of his intentions or flexible ability to control expression, dramaturgy, time, but this simple ability not to be indifferent to the communicative values of the concept, that is, the world of ideas, what one tries one's own work to convey (both communication with contractors and recipients) and to any difficulties that may occur during contact with the work in other entities. Gesture, in fact, constitutes what Truslit wrote about – the ability to experience and express true musicality[553]. What better thing can I do than to be empathetic myself, to get the other party to empathize[554]?
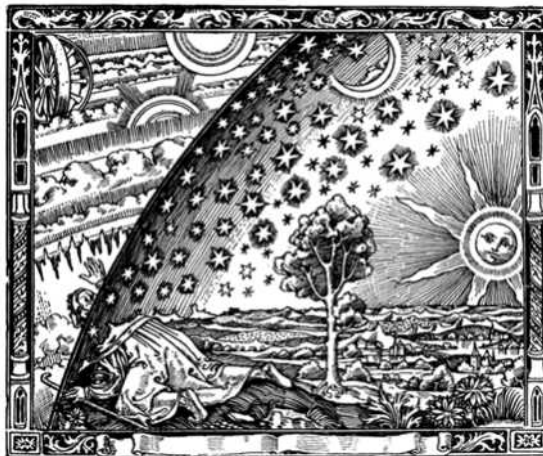
Graph 74. Anonymous, *Sky Observer*[555].

[553] B. H. Repp, *Op. Cit.*, p. 277.
[554] *Cf.* O. Tokarczuk, *Czuły narrator* – przemowa noblowska, Sztokholm, 07.12.2019 [source:] https://www.nobelprize.org/prizes/literature/2018/tokarczuk/104870-lecture-polish/ [Accessed: 01.05.2023].
[555] C. Flammarion, *L'Atmosphere: Météorologie Populaire*, Paris, 1888.

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List of abbreviations

AI   *(Artifitial Intelligence*) so-called artificial (simulated) intelligence

AMP   Ignacy Jan Paderewski Academy of Music in Poznań

AMU   Adam Mickiewicz University in Poznań

ASMR   *(Autonomous Sensory Meridian Response)*

CAC   *(Computer Aided Composition)*

Cf.   (*confer)* compare

et al.   (*et alterim)* and others

HCI   (*Human-Computer Interaction)*

IRCAM   *(L'Ircam, Institut de Recherche et Coordination Acoustique/Musique de Paris)* Research and Coordination Centre for Acoustics/Music in Paris

ibid.   (*ibidem)*

m. (mm.)   measure (measures)

NB   (*nota bene)*

Op. Cit.   (*opus citatum)*

Transl.   Translated

vide   see

vno/vni I   violin(s) I

vno/vni II violin(s) II

vla/vle   viola(s)

vc   Cello(s)

cb   double bass(es)

z.   notebook

Zag.   issue

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Summary (Abstract)

[**Keywords**: sound spectacle, streak imaging, *Schlieren Optics*, relational music, music in music, music from music, musical gesture, musical movement, meaning in music, semiotics of music, embodied cognition, *praxis*]

visibilium et Invisibilium (2022) is a sound spectacle for orchestra, group of amateurs, light, movement, audio and video playback. *The idée fixe* of the piece results from an attempt to conceptualize and implement ("translate") into multi-level structural assemblies in the work (musical gestures) operations performed with the use of Schlieren Optics imaging apparatus. The documentation of the work is an audio recording, along with performance materials – score, audio and video playback, and click-track.

The description accompanying the work is primarily an attempt to agree on various understandings and a hermeneutic of musical gesture. Hence the research objectives:

(1) searching for a flexible, capacious and useful definition of a musical gesture;
(2) searching for an answer to the question of how a musical gesture is a tool for effective communication;
(3) confirmation of the intuition about the development of understanding of musical gestures long before their theoretical codification;
(4) selection of analytical methods of musical gesture for a wide range of musical works, along with its practical application.

At the same time, in-depth reflection in the above-mentioned four areas serves to more fully expose the line of reasoning adopted in the construction of the piece *visibilium et invisibilium*. The description of some threads in the piece *visibilium et invisibilium* is contextually juxtaposed with theoretical considerations.

The description of the artistic work consists of four chapters preceded by **an introduction**. **The first**, historical-dogmatic chapter, concerns the motion of sound as a category introducing a musical gesture, along with strategies of aesthetic reading, as well as a reflection on the universal perception of the movement of sounds as a naturalized cultural category. The subject of the **second**, dogmatic chapter of the work is to illuminate the understanding of the musical gesture through a review of the most important concepts of its understanding. **The third chapter** is devoted to an attempt to define and reconstruct the structure of a gesture – its subject, object, space and functional levels. **The fourth chapter** is a practical synthesis of theoretical considerations by analysing Arvo Pärt's *Cantus in Memoriam Benjamin Britten in* terms of revealing various gestural aspects. The work ends with a short **ending**, containing a discussion of the conclusions drawn from the content of this description. The whole is complemented by **a bibliography** and **an annex**.