

EXTRA-MUSICAL SYSTEMS IN MUSIC:
THEIR IMPLEMENTATION IN CONTEMPORARY
MUSIC IN THE CONTEXT OF MULTIMEDIA

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Abstract:

The purpose of this research is to define methods of applying extra-musical and data-based systems in multimedia music works. The first part of the paper concentrates on the outline of the motivation and reasoning for using extra-musical systems from a composer's or sound artist's perspective and gives a historical precedent context. Parallels are drawn together with contemporary art and art critique examples. The second part of the research outlines the possible modes of the data-based systems application by analysing multiple multimedia works by composers or sound artists written in the last two decades including a piece by the author of the paper. The types of multimedia and its connection to sound are discussed, the conceptual deconstruction and its semiotic implications of the data used are analysed. The given conceptual and semantic context is applied for analysing the musical parameters and data's usage in sound control. Each of the pieces discussed outlines a particular mode of the conceptuality towards the extra-musical system usage and functions as a primal device for further conclusions drawn. The final part of the research consists of the general overview of the conclusions drawn and attempts to establish a general outline of the motivation and the resulting outcome behind the usage of the extra-musical systems in multimedia works.

Chapter I

Introduction

Extra-musical systems

Music is a time based form of art, generally associated with sound. As such and at least in the case of Western music, it has acquired a specific language that is used to describe various parameters that make up the internal content of music such as pitch, timbre, duration, rhythm and so on. However, there is hardly any technical language developed to describe the extra-musical implications of a particular combination of sounds or movements in time. For example, upon saying *chiaroscuro* we not only imply a particular way of combining what appears to be darker colours with contrasting lighter ones, but also inevitably imply a certain idea of „darkness versus light“ and so forth. On the other hand, if we were to define a *sonata*, the mainstream discourse would be concerned merely with the formal, technical aspects of music, avoiding the obvious political and cultural implications of such an imposing form (for instance, the harmonic relationships directly mimicking the Enlightenment ideas of linear, positivist time and history).

Such need for extra-musical discourse becomes even more urgent in the contemporary music field, since composers and sound artists are oftenly employing particular modes of sound and time organization that do not strictly fall under the traditional, technique-based readings of music and require a different, more contextual and intertextual type of analysis. In my MA research paper I propose several ways of reading such extra-musical implications of music and analyse several main approaches of how this extra-musical meaning is created within the medium itself. Having said that, this analysis is strictly contained within the medium itself; in other words, the contextual content I am concerned with in my paper does not engage with a historical or socio-political background of music or composers (which might obviously affect the reading of particular pieces). Rather, the content and more importantly - *meaning* that is created in the pieces I am writing about - is a direct outcome of the inner logic stemming out of either musical or conceptual principles used in these particular pieces.

In addition to that, in this paper I am concerned solely with the type of extra-musical meaning that is created within a multimedia context. This is strictly a personal choice as it directly connects to my own artistic practice as a composer and sound artist and allows me to concentrate in particular on the latter 20th and 21st century music. Several modes of reading such works that are proposed in this paper can clearly be applied to pieces of music that do not employ multiple, equally important mediums, however the multimedia aspect of the pieces discussed in this paper allows for a more direct and non-interpretational analysis.

It is important to also address several terms I will be using extensively in this paper. First of all, I would like to explain the main term and topic prevailing throughout the whole research paper, namely - data-based musical systems. The reason I am using this particular term is my interest in the extra-musical systems that, as mentioned already, create new *meaning* that lays somewhere beyond the strictly musicological interpretation of the piece, yet are contained within the concept of the piece and are the direct outcomes of the syntax or rules embedded in the piece itself. Data-based systems correspond to this idea directly, as they allow the production of correlation-based content, musical content in which the possible *meaning* can be traced back directly to the input that generates such pieces in the first place. Having said that, I use the term "data-based" not only in the strict, most common application of the word

(for example, “data sonification” or “visualization”), but with *data* also being understood as an organized system of values. In this case, any concept that is enclosed and self-contained is referred to as data system as well, as it contains a clearly established set of inputs, values and its syntax functions in a direct relation with the content it creates. Terms extra-musical and data-based in this case are interrelated, but not synonymous; extra-musical referring to all the possible modes of music creating meaning outside of its own internal rules and data-based systems creating extra musical meaning that is functioning in both musical and non-musical syntax.

In order to talk about concept-based music, it is important to assess and propose a possible motivation behind such approach. Music, and in particular sound, can be perceived as a system of syntax, based on collective transmission of sonic signifiers. These signifiers form meanings in relation to one another, thus not singularly. They do not necessarily carry one particular meaning on their own, but instead form clusters of “meanings” when in relation to one another. This idea directly stems out of the Schaefferian approach to sound as an autonomous object that can be assessed without the context of its production and dissemination. On the other hand, in direct opposition to the same modernist, Schaefferian idea, I would claim that meaning is unavoidably generated whenever sound is time based, or in other words, is in relation to any other objects, be it in time or space.

Let's for a second compare music with language, since both music and language use syntax and are closely related in general as systems of communication. We perceive language as it perceives us: words carry implicit intentions and open meanings; we intend to convey a particular idea through sentences and use words that can mean different things in different contexts. Sounds on the other hand do not create meanings autonomously, they don't signify on their own, only in relation to one another do we fill them with meaning. In this way, they are both elusive and intrusive.

And yet, music is positively obsessed with its media specificity. As Kim Cohen writes in his book "In the Blink of an Ear": “Only music includes, as part of its discursive vocabulary, a term for the foreign matter threatening always to infect it: "The extra musical".¹ This question interests me in particular - how does music create such meanings in an organized way and how are such systems created in which this extra musical content is a direct outcome of the sounds employed? For sounds create multiplicity of real and metaphoric spaces which we fill with meaning. What seems to me to be the main reason for a composer or sound artist to use concepts in his or her music is that the *concept* provides tools for organizing those spaces into preordained meanings that can then be filled in by an individual listener or viewer.

In the gallery arts, the conceptual turn after Marcel Duchamp adjusted the focus from an art of *at* or *out* to an art of *about*.² One of the main concerns in such case becomes containing all the elements of the piece within one particular approach or one micro-ecosystem which in turn define all the possible outcomes within a given piece. In order to maintain such coherence, a certain unity in approaching one's material is required. I would argue that such unity can be produced when most of the sonic elements of the piece are generated as consequences of a particular concept that was chosen prior to the composition stage. In this case, not only would

¹ Kim-Cohen, Seth. In the Blink of an Ear. Toward a Non-Cochlear Sound Art. The Continuum International Publishing Group Inc, p.39, 2009

² Kim-Cohen, Seth. In the Blink of an Ear. Toward a Non-Cochlear Sound Art. The Continuum International Publishing Group Inc, p. xxiii, 2009

all the sounds have a certain conceptual reasoning behind them, but also would be able to generate their own autonomous meanings.

As mentioned already, data-based systems, as organized systems of values seem to be a useful platform for making music that is not only aimed *at* or *out*, but also is *about*. Any given data contains information that is encoded not only directly in the data itself, but also in the ways it was collected and organized. When transposing³ such data from one medium to another, new meaning is generated not only by the new context that this data is placed to, but by the transposition process itself. It is unavoidable that the process of converting something from one medium to another generates new meanings on its own; as such process involves a particular context of aesthetics, style and form. As an example, we could think of a possible way of reading 16th century urban area map as a musical score. We could imagine drawing a simple Cartesian coordinate system over this map and assigning a pitch and duration to both *x* and *y* axes. A musician could then follow the structure of the streets and given directions by adjusting his pitch in time according to the system we have just proposed. It is obvious that the context of this 16th century urban area map would play an important role in how we would interpret the piece as the street structure, the approach towards distance and perspective, the amount of detail used and so on would unavoidably provide us with an autonomous context that is not dependent on this hypothetical piece itself. Rather, it provides this piece with both the content of the music making (the score) and an independent basis for extra-musical interpretation.

On the other hand, the way a particular musician will choose to interpret or transpose the given data of the map to the sonic medium contains another layer of context and influences. Therefore, both the content and the form can be dissected and analyzed individually and autonomously. However, it is because of the unified conceptual approach – using a coordinate system over a structure that such system certainly belongs to - a map, and also following a particular route or directions that are embedded within the map itself – that the piece may possibly generate an extra-musical layer of meaning. It might not only provide us with a certain new, sonified understanding of the given urban area, but also raise questions on how accurate and inventive can and should a musician be in interpreting visuals and graphic scores.

Extra-musical systems are thus simultaneously hard and easy to assess in terms of their sonic content. Their elements often dictate the form and content of the piece, which enable the composer not only to generate a unified and coherent musical space, but also require the approach to be pre-thought and predefined beforehand. An extra-musical system functions as such only if all the parts of its musical form have interconnected relationships. Such relationships would create links between all the parts of the composition (for instance, duration, timbre, rhythm, etc.) that could be traced back to the initial concept. On the other hand, one needs to be aware that such an approach to composition and artistic practice imposes a certain structure of working with sound that might appear as eliminating the possibility of subjectivity or self-expression. Sol LeWitt has described it as “the idea which

³ In this context the term “translation” is often used to describe a certain set of content being converted from one medium to another. However, I would argue that translation as a process would necessitate an intention of retaining the meaning at any given medium. One of the main attributes of translation is thus enabling a similar, ideally identical, reading of the same content within different mediums. In this paper I am addressing a different kind of conversion, where the intentional meaning is created by the actual process of displacing a given set of data from one medium to another. It seems to me that *transposition* would be a much more appropriate term in this context as it implies not only the action of reinstating something, but also recontextualizing the material in question.

becomes machine that makes art”.⁴ In his “Paragraphs on Conceptual Art” LeWitt dismisses the paradigm of style and taste as well as the emotional impact of the piece, instead proposing art based on definite ideas, an art that would set clear, impersonated and systematic rules for the execution of the work.⁵ It is therefore obvious that concepts can also threaten to overrule the will or need to make one’s artistic decisions (though obviously a concept has been designed using such decisions in the first place) by possibly eliminating the possibility of adjusting sonic characteristics it has implied onto the piece.

Yet these restrictions can be extremely liberating and trigger the artist to go beyond his own established patterns on approaching the material and work itself. It is the main reason why I am interested in using such systems in my own work. The idea of designing a set of rules (musical or conceptual) that can then define the whole sonic and also semantic structure of the piece seems attractive because it allows the piece to propose invented and yet coherent, structured realities. Such musical spaces in most cases remain synthetic as they concoct different fictitious realities; they also avoid being ruled purely by taste or emotion by imposing an over-arching sonic structure over the piece.

On multimedia

Within the last few decades, new media and digital technology has come to define our society, influencing not only the daily life but also the way art is made, disseminated and perceived. As Lev Manovich explains it in his book “The Language of New Media”:

“Just as the printing press in the fourteenth century and photography in the nineteenth century had a revolutionary impact on the development of modern society and culture, today we are in the middle of a new media revolution - the shift of all of our culture to computer-mediated forms of production, distribution and communication. This new revolution is arguably more profound than the previous ones and we are just beginning to sense its initial effects. Indeed, the introduction of printing press affected only one stage of cultural communication – the distribution of media. In the case of photography, its introduction affected only one type of cultural communication - still images. In contrast, computer media revolution affects all stages of communication, including acquisition, manipulating, storage and distribution; it also affects all types of media - text, still images, moving images, sound, and spatial constructions.”⁶

Because of its dominating discourse on how we perceive, view and hear the world, I find it important to engage with the digital domain and new media in my own work. It seems crucial to embrace the various digital forms and discourses, combining them in a multimedia environment which allows embracing and examining different aspects of this culture within the medium and the piece itself. Another reason for examining specifically multimedia pieces is my own artistic practice in which I do usually combine various audio-visual, digital media

⁴ LeWitt, Sol. Paragraphs on Conceptual Art. Conceptual art: a critical ontology (edited by Alexander Alberro, Blake Stimson), Cambridge, Massachusetts, London: MIT Press, p12, 1999

⁵ Verwoert, Jan. Bas Jan Ader: In Search of the Miraculous, Afterall Books, Central Saint Martins College of Art and Design, University of Arts London, the artist and the author.

⁶ Manovich, Lev. The Language of New Media. Cambridge, Mass.: MIT Press, 2001.

with more traditional instruments and music dissemination situations (such as the concert hall or gallery). In order to explore the themes that interest me (such as authenticity and identity, mechanisms of control as well as the nature of contemporary technology and its impact on the society we inhabit), I find it necessary to employ various media and contemporary digital technologies; not only do they allow for new forms and sounds to emerge, but they also raise their own problematics within a particular work – a quality I find important and interesting to explore further in my own artistic practice.

On methodology

A few words must be said on the methodology used throughout this paper. It is always problematic to be assessing something in a methodologically thorough way that is as elusive and complex as systems of meanings, contexts and aesthetics, especially in the context of art and music. I have therefore opted for an analysis that would allow me to investigate this music not only on the basis of its sonic qualities, but also on the various implications that the actual context of how and why is the sound generated, executed and perceived. In this regard, I am approaching each of the pieces discussed in the next chapter in the following manner:

1. Describing and defining the main sonic structures that the piece in question contains. This involves the form, the nature and characteristics of the sound, the instrumentation and various other, strictly musical parameters. They are discussed merely focusing on their acoustic qualities, though the pieces are mostly not assessed in musicological terms, since the analytical discourse is concentrating on the connections with the meanings generated by the contexts outside the music instead.
2. Explaining and defining the conceptual aspects of the data or extra-musical context used. Every piece discussed in this paper can, in my opinion, be described as using an extra-musical model for not only generating the possible meaning of it, but also creating the actual content, narrative and form of the piece. Its influences are direct and interrelational; they connect the various elements of the work on both micro and macro levels. It is thus important to assess the particular semantic, historic or cultural content that the concept is concerned with in order to be able to fully comprehend the consequences of using such material and context. This aspect is approached by looking at the material used in the piece from an autonomous perspective; in other words, I firstly concentrate on defining and briefly examining the context in question not in relation to the piece, but as a set of possible meanings that is governed by its own independent rules.
3. In addition to that, the structure that is imposed by this extra-musical material onto the sonic parameters of the piece-in-question is explained and discussed. This, in my opinion, is the crucial part of the aforementioned *transposition* process that I usually employ when working with extra-musical material. The way the conceptual structures are imposed onto the musical material directly influences the actual sonic content that the listener or viewer is confronted with, and defines its musical characteristics. It is therefore crucial to dissect the main models of such imposition and discuss in detail how these conceptual, non-musical structures function within the sonic realm and its rules.
4. Finally, an overview of the possible new reality the piece created is discussed in relation to the elements and structures it employed. When exposed to relationships (as

for instance, in time) every single context and sound begins to create new combinations of context and sound. Philosopher and critic Julia Kristeva has famously argued that “the notion of intertextuality replaces the notion of intersubjectivity” when we realize that meaning is not transferred directly from writer to reader but instead is mediated through, or filtered by “codes” imparted to the writer and reader by other texts”.⁷ Similarly, in music the listener must decode and understand the intertextuality of the sonic work in order to be able to comprehend it in the way intended by the artist. Therefore, I discuss the semiotic implementations of the extra-musical structures imposed over or generating the sonic content of the piece, and the possible effect it might have for the various interpretations of the piece.

⁷ Kristeva, Julia. *Desire in Language: A Semiotic Approach to Literature and Art*. New York: Columbia University Press, p.69, 1980

Chapter II

Analysis

I Track You Sometimes

Live video score for open instrumentation. Andrius Arutiunian, 2016

The piece consists of a live projection of the flight radar data, based on the flightradar24.com website which receives and shows live data of the flights happening across the globe. This flight tracking device allows users to follow the movement and speed of planes as they move across the selected area on the map, based on the Google Maps engine. Musicians are asked to select a plane that is currently visible on the screen and track its movement according to the following set of rules:

1. Only pulses in various speeds and pitches are to be used to track the plane movement.
2. The speed and pitch range of the pulse to be used is defined by the your plane's position in the screen and the instructions given in the video score.
3. Once your plane disappears from the screen – stop playing the pulse and select a new plane to track.
4. The length of the piece is open, gradually fade-out when finishing, this will also signal that no new planes should be selected anymore.

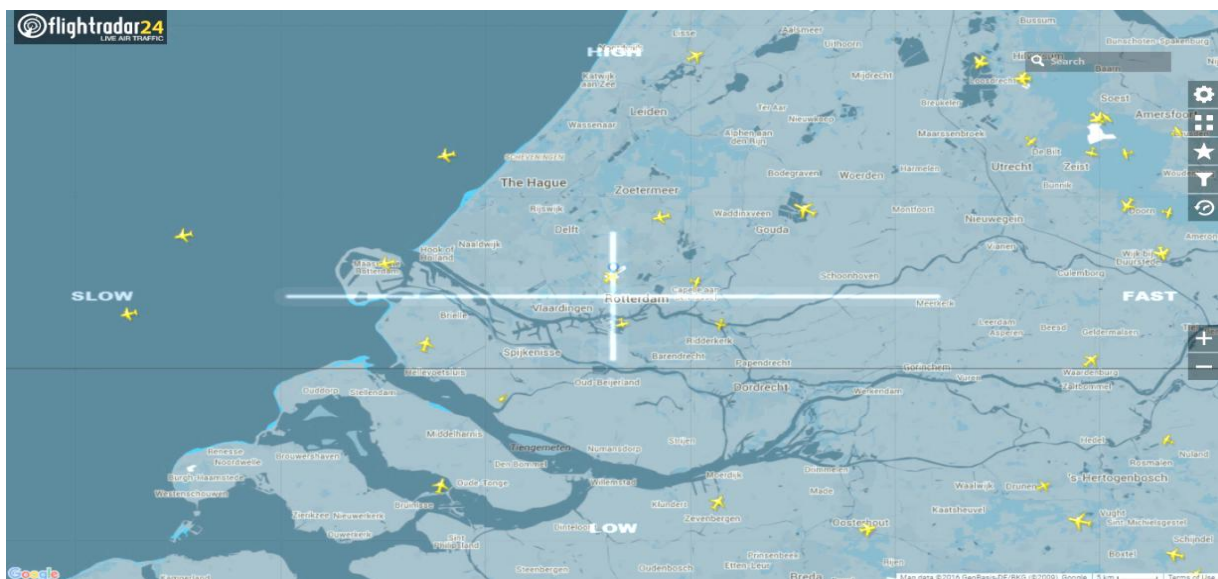


Figure 1 – I Track You Sometimes by Andrius Arutiunian, 2016, screenshot of live projection

The score superimposes a grid onto the flightradar24.com website's window, which consists of two axes, vertical and horizontal. [Figure no.1] The first, vertical axis contains two words – “high” and “low” at the top and bottom sides of the screen. This axis indicates the pitch register that the player should use while tracking the plane. As the plane moves within the vertical axis, the pitch should be adjusted accordingly by gliding from the current pitch to the new, anticipated one. The speed of these glissandi is therefore defined by the speed in which the plane moves through the area shown on the score. The second, horizontal axis consists of another pair of words – “fast” and “slow”, that indicate the speed at which the player should

play his or her pulse. As the selected plane moves through the map the player tracks its horizontal position by adjusting the speed of the pulse. The left and the right sides of the screen thus indicate the fastest and slowest possible speed of the particular pulse of a player.

There are three additional suggestions that the players might choose to implement while performing the piece. If the selected plane moves through an urban area or area that consists of water (a river, lake, or sea) the player might play “noise”. This can be interpreted freely, either by playing actual noise or by distorting one’s sound (for instance, if played by string instruments the musicians might play *sul ponticello* for the areas indicated above). Since the piece is for open instrumentation, any combination and amount of instruments can be used. However, if possible, performers are invited to use sounds that acoustically or semantically refer to signals, especially in the context of radars. Thirdly, it is suggested that the area selected should preferably be the actual location of the performance, in other words “site-specifying” the context of the piece. However, this might differ per performance, since there are areas that consist of few or no plane routes, which obviously alters the actual sonic content of the piece (obviously if there are no planes flying over the selected area at the given moment, the musicians should not play any signal whatsoever).

The piece thus implements a non-musical system as the means of generating the sonic content and formalising the meta-narrative of the work. The direct transposition of the plane movement into a series of pitches directly defines the pitch content of the piece as well as its formal, time-based structure. This formal limitation imposed by the manual task of following a particular movement of a particular plane forms a constantly changing content of the piece, which directly depends on the commercial flight routes and the selected day and area. On the other hand, this same content might dramatically change depending on weather conditions or unexpected events (such as the likely rescheduling of the flight routes in the event of terrorist attacks). In this way, the manual transposition of the flight route exposes not only the plane movement in a selected map frame, but also various micro and macro socio-economic and geographic contexts that defines such routes in the first place. It is through these, intertextual links between a given route, its context and its transposition into the sonic realm that a meta-narrative of the piece begins to emerge.

Such approaches have of course been used in music before as the time-based nature of this medium fits perfectly for using forms that create coherent identity by allowing the content to constantly change. Perhaps one of the most famous examples of such an approach is *4’33* by John Cage, in which the entire content of the piece is generated by the audience’s presence in the space. Nonetheless, the piece is very strict about its form and the way the silence must be achieved, as it consists of three parts, each of which should be performed in total silence and can last any length. As Richard Taruskin describes the piece:

“Like any other musical “work,” it has a published, copyrighted score. The space on its pages, measured from left to right, corresponds to the elapsing time. Most of the pages have vertical lines drawn on them, denoting the chance-calculated time articulations on which the duration of the piece depends. One of the pages, bypassed by these markers, remains blank. If copyrighting a blank page is not an act of aesthetic grandiosity, what is?”

Cage therefore makes sure that an adequate, distinct identity (one that can be copyrighted, quoted) is maintained allowing the actual content of the piece to be fluctuating and differing

in different occasions. The meta-narrative of 4'33 emerges exactly out of this ephemeral character – every sound can be perceived as worth of listening to; intentionality is not a necessary condition for music to be defined as such; and the famous idea of “there’s no such thing as silence.”⁸

By taking a closer look to 4'33, it quickly becomes apparent that the actual content of the piece directly correlates with the context in which such content is placed, and its subversive plot is defined by the way one chooses to read it. For instance, the piece clearly hints at various socially preconditioned modes of listening, in particular as a communal activity. This can be perceived as a criticism of the traditional listening rituals and the composer-audience relationship. Even though the actual sonic content of the piece is the sound of the audience, it become a legitimized musical material only because of Cage's specifications that people gather together to listen to the sounds of the hall for the allotted time period.⁹ The piece therefore communicates to us not only the opportunity to listen and hear sounds that might otherwise escape our focus of attention, but also exposes us to a different mode of perceiving communal reality or public space – if there’s no such thing as silence, all sounds can be equally worth of listening to. One must therefore be aware not only of the sounds that are projected to us as an audience, but also realize that it is us, the audience that might generate those sounds in the first place.

By employing a very strictly defined structure in which the actual sonic content of the piece is fluid and ever-changing, Cage creates a narrative that relies not only on the direct sonic manifestation of the piece, but also on its intertextual implementations. Similarly, *I Track You Sometimes* functions on multiple layers. Firstly, the direct tracking of a particular plane movement transposes the speed and direction in a correlational way that can be directly followed by a spectator. By approaching the movement of the planes in an almost literal sense, the movement of the pitch in time becomes multidimensional – it signifies the various directions and systems of interrelationships between various planes (plane tracks do not usually intersect, plane movement is usually following a predesigned route, not only from destination A to B, but also specifically through destination C and D and so on). Such interrelations create content only in relation to one another (for instance, in movement from one pitch to another) and generate recognizable systems based on the multiplicity of movement involving multiple planes and players. On the other hand, it is implicit in the score that the players might choose the exact same plane to follow. Such an occasion does create an additional situation in which the player’s movement might not coincide with the other one’s interpretation of the similar signal system. Such difference in movement might occur due to the implicit difference of various instruments (for example, a cello will glide in a much smoother way than a trombone, just because it doesn’t need to change positions as often). This in itself poses a question about how different instruments (let alone persons) interpret similar systems of signs and if they do so, does such difference tells us anything about the varying degrees of interpretation possible within a static piece structure?

On the other hand, the ephemeral, constantly changing nature of the score provides the natural question about the identity of the particular score, which is inherent in most of the open scores. However, the connection to the outer musical input of the piece – the live feed of plane movement data, is directly connected to the main focus of this paper – the self-contained systems of generating meaning. The piece is bound to stay within the preordained

⁸ Cage, John. *Silence*. Hanover: Wesleyan University Press, 1973

⁹ Goehr, Lydia. *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music*. Oxford: Clarendon Press, p. 264, 1999

implication of plane movements, its melodic lines, harmonies created directly by the planes routes that have been designed somewhere in the air traffic control rooms. It is exactly because of this open implementation that the focus of the piece remains intact, as the content of the video provides inherent inner rules for the sound transformation. The system is generating differing musical content every time it is played, while at the same time, because of its enclosure, the meaning it can possibly generate stays stable and forms the autonomous identity of the piece.

Thus the non-musical structure generates a narrative that works on multiple conceptual levels: by employing the aforementioned possibility of multiple signal unisons it exposes the fragility of interpretation inherent in ephemeral, open instrumentation scores. On the other hand, a set of differing contexts that the plane routes refer to forms a narrative of its own, one that begins to create *meaning* on its own, even though the piece always stays constrained to its own limitations and strictly defined means of musical interpretation. It is here that my main interest in non-musical systems lay and here that it functions at its fullest – strictly defining the musical rules and yet generating autonomous musical and conceptual meanings and interpretations.

Scriabin to MIDI

For automated piano (Disklavier), electronics and video. Andrius Arutiunian, 2016

The piece is based on the colour theory of Anton Scriabin, the Russian composer associated with Late-Romanticism who pioneered explorations of colour and light projections in music. In 1911, Scriabin premiered and published *Prometheus* – a symphonic poem for orchestra and light machine in which he explored the interaction between image and sound as a coordinated simulation of multiple senses.¹⁰ In order to use colour simultaneously with sound, the composer worked out a system of correlating colours and pitches which also act as root notes for chords in harmonies. Although never performed with the light in the composer's lifetime due to the technical difficulties,¹¹ the piece is widely regarded as one of the earliest scores incorporating additional, non-musical media.

Having started working on my piece *Scriabin to MIDI*, I quickly discovered that Scriabin made a few piano-roll recordings of his own pieces. While this indirect evidence of Scriabin's pianism prompted a mixed critical reception, close analysis of the recordings within the context of the limitations of the piano roll technology has shed light on the free style that he favoured for the performance of his own works, characterized by extemporary variations in tempo, rhythm, articulation, dynamics, and sometimes even the notes themselves.¹² However, when listening to these piano-roll recordings it soon becomes apparent how audible the presence of the piano-roll technology is itself – there is an inherent sense of stuttering in the playback of these pieces, due to the natural quantized nature of the technology in question. This disparity between the composer's individual expression and the recording technology available prompted me to question whether there is a possible analogy of such a process in the contemporary digital audio workstation, in particular the communication between the signal input and its quantization, especially – as in MIDI.

¹⁰ Gawboy, Anna M. and Townsend, Justin. Scriabin and the Possible. MTO journal of the Society of Music Theory, Volume 18, Number 2, 2012

¹¹ Sabaneev, Leonid. Scriabin's Prometheus. The Blaue Reiter Almanac, edited by Wassily Kandinsky and Franz Marc, translated by Henning Falkenstein, 127–44. London: Thames and Hudson, 1974

¹² Leikin, Anatole. The Performance of Scriabin's Piano Music: Evidence from the Piano Rolls. Performance Practice Review 9 (1): p.97–113, 1996

MIDI is a technical standard that describes a protocol which allows a wide variety of electronic musical instruments, computers and other related devices to connect and communicate with one another.¹³ Contemporary digital audio workstations allow users to transpose audio input into the MIDI protocol by using various in-built algorithms. As fluent as these might be, a form of quantization is nonetheless required when transposing material that has been recorded live to the environment that functions by numeric representation (digital). In this regard, piano-rolls are quite similar to MIDI, as they both imply a certain sense of misrepresentation and inaccurate encoding of information.

In order to accentuate these similarities, I decided to convert a piano-roll recording of Scriabin's *Deux Poemes* op 32, no.1 to MIDI using Ableton Live – one of the most popular DAW allowing users to implement MIDI-to-audio conversion. In order to achieve conceptual unity, I made a decision to apply this conversion for 112 generations overall (or one for every year since the recording was made (1903). Therefore, the original recording is first of all converted to MIDI, then exported back as an audio and converted to MIDI again (thus becoming the second generation of conversion).

Because of this process, the initial recording starts to "disappear" and the imperfections of the DAW audio to MIDI conversion algorithm begin to emerge. Obviously, not only do they obscure the original material, but also disintegrate and disembody it. The work thus functions not so much by concentrating on the original piece and its execution by Scriabin, but instead by articulating the analog to digital conversion artefacts and sonic debris. The *Disklavier* part hence consists of Scriabin himself playing one of his piano pieces, but translated from analogue to digital (piano roll to recording), then from audio signal to MIDI and back forth to the *Disklavier*.

In order to impose the "closed-system" approach where all the elements of the piece stem directly from the concept I've decided to include a video projection that would articulate the visual aspect of Scriabin's own approach to music. The projection consists of a changing display of colours following the movement of harmony in *Deux Poemes* op 32, no.1. The colour projection is arranged according to Scriabin's own colour theory [Figure no. 2]. Every chord would thus be assigned a colour according to its root note.

Upon preparing the first version of the piece I have realised that the process of exposing the analog to digital conversion artefacts would become even more apparent if the piece lasted longer than just two and a half minutes (the original length). I have therefore decided to slow down the tempo of the piece in 1 BPM for every year since the recording was made. The original tempo is around 128 MM and so the last few notes of the piece are rendered at 16 BPM.

The resulting piece is using a non-musical system for generating both conceptual and musical content. Firstly, the transposition of the audio recording of Scriabin's piece exposes the fragility of the software that is used for such conversion. As with any other analogue to digital conversion, it is unavoidable that a certain degree of information will be altered destructively. In this regard, such an approach is comparable to that of *glitch*. As Rosa Menkman writes in *Glitch Studies Manifesto*:

¹³ Swift, Andrew. A Brief Introduction to MIDI. SURPRISE (Imperial College of Science Technology and Medicine), 1997

“The glitch has no solid form or state through time; it is often perceived as an unexpected and abnormal mode of operandi, a break from (one of) the many flows (of expectations) within a technological system.”¹⁴

In *Scriabin to MIDI* the approach towards the technological aspects of analog to digital conversion exposes similar disruption towards the original material, comparable to the glitch approach. The conversion process, applied for over a hundred times starts to destroy and alter the original material to an almost unrecognizable state. Only echoes of the harmonies and melodies remain, recognizable because of their referentiality rather than the actual coherence of the material that is left after the conversion. However, it is because of this disruptive approach that the piece gains its new identity; the artefacts of conversion exposed by the multiplicity of the process create a new musical reality that is independent from the original material.

On the other hand, the form of the piece is limited by its own material, since the original piece is slowed down by the amount of years that have passed since 1903. By indicating that the piece should be rendered anew every time it is to be performed, I have ensured that the piece not only becomes ephemeral and of different length in every different performance but also becomes impossible to perform after year 2031. In this way, the sense of destruction and disruption persists throughout multiple levels of the piece: the destruction caused by conversion and the impossibility of performance due to the necessary slowing down process.

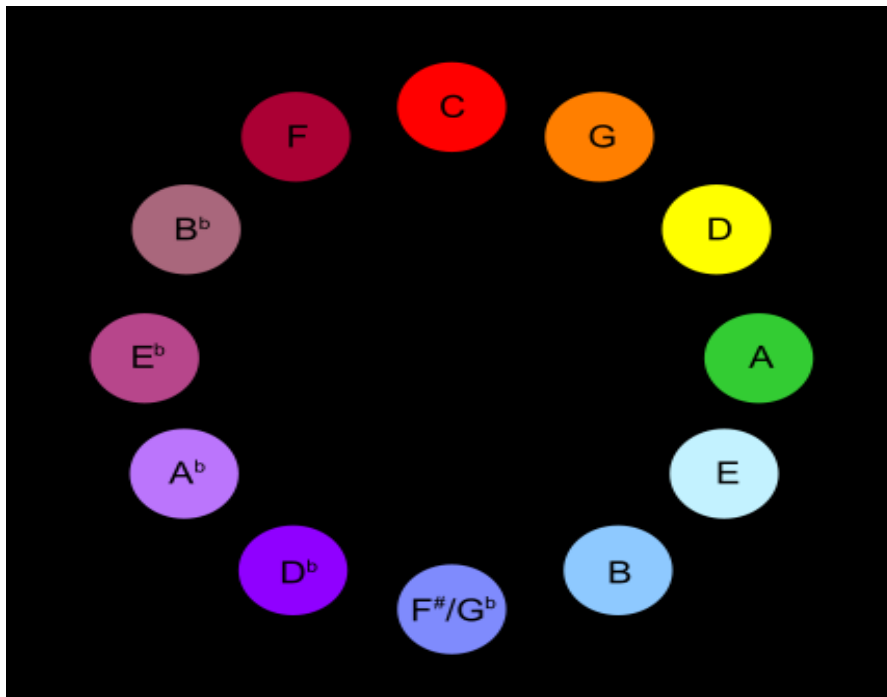


Figure 2 –Scriabin colour scheme arranged into a circle of fifths¹⁵

Because of the multiplicity of the elements in use in this piece, it seemed important to approach the material as much self-contained as possible. I have therefore decided to place the video projector inside of the Disklavier and indicate that both the main and keyboard's lids

¹⁴ Menkman, Rosa. *Glitch Studies Manifesto*. Amsterdam/Cologne, 2009/2010

¹⁵ Mouagip. File:Scriabin-Circle.png, Public Domain,
<https://commons.wikimedia.org/w/index.php?curid=14793445>

should be closed at all times. This results in the projected colours escaping only through the cracks and openings left due to the cables or imperfections of the instrument. Such an approach creates content (the amount of colour projection that reaches the viewer) that is directly defined by its own limitations and the limitations of the equipment that was used to create the content. For example, if bigger video cables are used the cracks would obviously become larger too, resulting in more light being reflected by the insides of the piano and emitted towards the audience. Similarly, if the lids do not match the edges of the instrument perfectly, this would result in openings that would emit light and colour. Because in general the amount of light emitted is very low, any increase in the exposure of the light is extremely effective and noticeable.

The non-musical system in use is obviously more subtle in its own rules as compared to a direct transposition of elements as in other pieces. However, it employs a systematic approach towards all the formal, conceptual and sonic elements of the piece. Perhaps most prominently, such a system is setup that would ensure a form of destruction towards one or more elements of the piece (for example, analog to digital conversion and the quantization process necessary for its execution unavoidably results in the loss of certain notes and textures). Destruction here acts as a generative process, new notes emerge as the software re-reads the same material over and over again and differing amount of light is emitted out of every piano used. Finally, the piece and its form is setup in such a way that it will be impossible to perform it after less than twenty years and it will become longer and slower with every year passing.

Let Me Play You Something

Performance. Andrius Arutiunian, 2016

How do we form communities? In his essay “Community at the Margin” Crispin Sartwell proposes that communities are formed by exclusion rather than inclusion.¹⁶ “Dominant culture”, he argues “requires exclusion not only in order to construct itself, but also because it requires the construction of the marginal communities to keep itself alive.”¹⁷ We mark certain individuals as “not belonging”, being different and by applying such definitions, already exclude them from our shared notion of “we”. Inclusion on the other hand merely bonds us, it provides us with pre-defined qualities we share with each other. However it does not provide us with a unique identity - it takes an act of excluding someone from the group in order to finally shape the identity of any given group, as it is only by not letting certain individuals to cooperate and belong that we distinct ourselves from the “Other”.

It was this question of exclusion as the main driving force behind the formation of communities that I was interested in exploring in this piece. I was participating in the Winter School of Discontent – a non-formal educational program hosted by the gallery WEST in The Hague which was closely connected to the theme of politics and community in art. Therefore, testing this notion of exclusion as a socio-political tool seemed to be a very appropriate response to the whole week’s discussion. I set out to form an environment in which a certain group of people would be excluded and therefore would form two communities – the “excluded” and the ‘included”.

Exclusion as a conceptual artistic principle is of course prominent in many artists’ work. Perhaps one of the most widely known artists employing exclusion as his investigative tool is controversial Spanish artist Santiago Sierra who attempts to highlight the problematic nature

¹⁶ Sartwell Crispin ,Diversity and Community: An Interdisciplinary Reader. Blackwell Pub. 2002

¹⁷ Sartwell Crispin ,Diversity and Community: An Interdisciplinary Reader. Blackwell Pub. 2002

of capitalism in many of his pieces.¹⁸ One of his most celebrated works was made for the Spanish pavilion of the Venice Biennale in 2015 for which he covered the word “España” on the Spanish Pavilion’s facade with black plastic and sealed the building’s entrance with cinderblocks. Uniformed guards were positioned at the entrance of the pavilion and would only let in visitors who possessed Spanish passports. However, all that the visitors would find in the pavilion were scattered remnants from the previous year’s installation.¹⁹

Sierra’s work naturally employs exclusion to underline the problematics of nationality and identity defined by particular signs, in this case – passports. He achieves that not only by setting up physical limitations using the same model that is used by the states (border control), but also by recreating the actual border control situation by requiring the visitors to present their passports at the entrance. Using a systematic approach to exclusion based on the contemporary state’s self-identification mechanism, he penetrates and subverts those mechanisms by enforcing his own passport control within a sovereign territory. Such an approach is emphasized even further by the fact that the spectacle of the exclusiveness, the actual site which was only accessible to the citizens of Spain, has been eliminated from the equation since Sierra deliberately did not include any content or “art piece” inside of the hall. By implementing the principles borrowed from a fully functional and extremely prominent system such as states’ border control system, Sierra creates an autonomous piece that is capable of creating its own, independent and unique meanings.

There are other factors that do form communities and because they do an important role in *Let Me Play You Something* I feel that I should address some of these here as well. One of the most prominent acts of forming and confirming an identity of any given group (especially on sociological and political level) are rituals. Semiotics and cultural anthropologists have long suggested a way of understanding and interpreting rituals as cultural constructs capable of formalizing the order, allowing inter-communication and most importantly altering social reality.²⁰

In addition, music is an important factor in maintaining and executing rituals. As Jacques Attali has pointed out in his book “Noise, The Political Economy of Music”:

“First, music - a channelizer of violence, a creator of differences, a sublimation of noise, an attribute of power - creates in festival and ritual an ordering of the noises of the world. Then - heard, repeated, regimented, framed, and sold - it announces the installation of a new totalizing social order based on spectacle and exteriority.”²¹

Because it necessarily involves power (in order to establish a particular social and political order), ritual indeed employs violence to assert its own limitations. As Attali points out:

“The musician: the sacrificed sacrificer; the worshipped and excluded Pharmakon; Oedipus and Dionysus. His work, which is political because it is religious, serves to integrate and channel anxiety, violence, and the

¹⁸ <http://www.lissongallery.com/exhibitions/santiago-sierra-part-1>, last accessed in 2016

¹⁹ <http://bombmagazine.org/article/2606/santiago-sierra>, last accessed in 2016

²⁰ Rappaport, Roy A. „The Obvious Aspects of Ritual“, *Ecology, Meaning and Religion*. Richmond, Calif.: North Atlantic Books, 1979

²¹ Attali, Jacques, *Noise: The Political Economy of Music*. Theory and History of Literature, Volume 16, University of Minnesota Press, Minnesota/London, 1977

imaginary, and to repress marginality. But in addition, because it is a threat of death, it transgresses; it heralds; it is prophetic of a new form of relations with knowledge and of new powers.

Primordially, the production of music has as its function the creation, legitimation, and maintenance of order. Its primary function is not to be sought in aesthetics, which is a modern invention, but in the effectiveness of its participation in social regulation. Music - pleasure in the spectacle of murder, organizer of the simulacrum masked beneath festival and transgression - creates order. Every human production is in some way an intermediary and differential between people, and thus, in a sense, can be a channeler of violence.”²²

Where do we experience music as communal listening situation leading towards order and transgression in contemporary society? Perhaps one of the most striking examples of such spaces is the dance club. Dance clubs directly involve a ritualistic approach to music listening and most importantly dancing: the attendee needs to meet a certain level of dress code defined by the venue in question, show or purchase a ticket and join the crowd in the movement. Music plays a crucial role here, as it provides a united, shared space to jointly experience the climaxes created by the compositional means. In this regard, techno music is a good example as it is one of the most stripped down and raw dance music genres that nonetheless manage to attract a massive following and crowds all over the world.²³ One of the main factors that enables such a release of energy in unison is the reuse of a particular rhythm pattern that is common to the techno genre in general. The pattern and its harsh and heavy character can be found in almost every techno track all over the world, ensuring a certain sense of familiarity amongst the listeners. When there are no expectations for innovations and unexpectedness left, the listener can fully subdue herself or himself to the feeling of being in a crowd and moving in unison according to the predefined musical patterns.

These ideas of ritual, violence and music were central when working on the *Let Me Play You Something*. First of all, I wanted to design an environment in which a certain group could be initiated and defined as a community by an act of exclusion. Ideally, such exclusion would also happen voluntarily and would be defined by the participants themselves. Therefore, I decided to install a pair of headphones in the gallery and play a 2 hour-long live set of techno tracks to whoever picks up the headphones. In addition, I placed a bouncer a few meters away from the set where the music would be played to one person per time; the bouncer would only allow one person per time into the designated area where my performance would take place and would instruct them that they can stay as here long as they want to (but the performance would nonetheless last two hours in total). Therefore, every single person listening to the techno tracks being blasted through the one pair of headphones (to them exclusively) could decide whether to stay there for the time that is left or to share the time with other visitors of the gallery. In this way, a strange and exclusive community was formed, where every single member of this small community would be forced to decide how many members would be allowed to still join the community.

²² Attali, Jacques, *Noise: The Political Economy of Music*. Theory and History of Literature, Volume 16, University of Minnesota Press, Minnesota/London, 1977

²³ Snoman, Rick. *The Dance Music Manual: Tools, Toys and Techniques*. Second edition. Focal Press, 2009

The initial idea worked out successfully, as the visitors indeed felt the social pressure to share the time with the others – even though most of the people started dancing while listening to the tracks being played live to them, they would not stay for longer than 15 or 20 minutes per person, since they saw a line of other visitors forming in front of them. By applying a systematic approach to the concept where the form and content of the piece were both directly influenced by the idea of forming a community of exclusion, a new identity of the piece emerged, which clearly references to the ideas of self-control, music as a tool of forming an identity and organising communities through the act of exclusion committed by the members of that community themselves.

Roomtone Variations

For improvising ensemble. By Nicolas Collins, 2014.

A series of sine tones are played through the speakers towards the hall. There is a music staff projected on the screen on which a series of pitches slowly emerge, placed in different registers. They all resemble overtone series of a few fundamental pitches. Musicians slowly begin to play drones and figurative lines using the pitches on the screen.

This is a piece by American composer and sound artist Nicolas Collins – *Roomtone Variations*. The piece is using the natural resonance frequencies of the room – or room modes – which are measured by transmitting a series of sine sweeps into the hall in the beginning of the piece. The most responsive frequencies are then projected on the screen using a specially designed algorithm which translates the frequencies into approximated (12-tone scale) pitches. Musicians are asked to use these pitches as a material for improvisation as some particular pitches are highlighted in red. As composer describes the piece himself:

“I use a feedback system for finding the strong resonances (basically a 24 filter version of the Sabine Feedback Exterminator) and convert the fcs to their nearest tempered equivalent. I then “fold” the full range down, by octaves, to progressively narrower ranges — this latter tactic came from experiments I was doing on what I call “the fallacy of octave equivalence” (intervals change feeling with spread), about which I got into extended correspondence with Christian Wolff. The result is the closest I’ve come in 40 years to serial composition.”²⁴

I have decided to talk about this piece because of its simple and yet elegant and effective approach towards transposing one type of data into another and by such dislocation creating a system that autonomously generates the initial content of the work. First of all, because the score is generated live the actual pitch material is inevitably ephemeral and site-specific. The only from that the composer proposes is the speed at which he moves through the pitch material by highlighting certain notes to be played at the given time. On the other hand, the instructions for improvisation are extremely open, giving the musicians the freedom to shape and influence the form as well, since the composer is deciding on the form and duration of the piece on the fly.

²⁴ Collins Nicolas. http://www.computermusicnotation.com/?page_id=266, last accessed in 2016

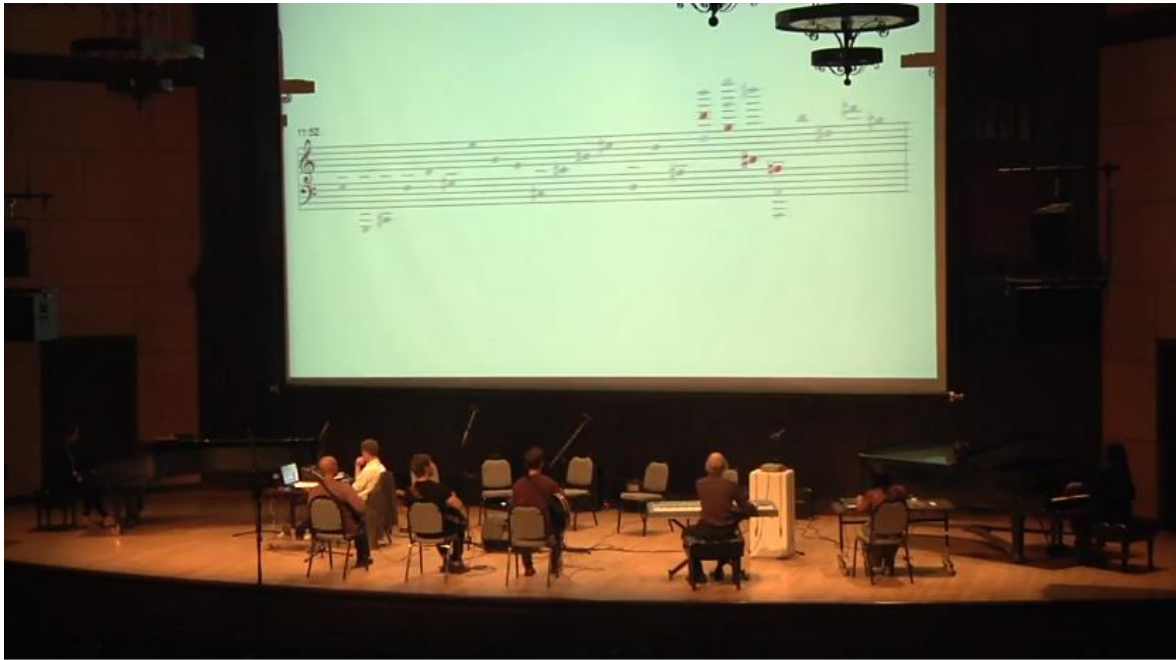


Figure 3 - Roomtone Variations by Nicolas Collins. Screenshot from Youtube.

Nonetheless, even though it is a piece involving improvisation, the systematic extra-musical approach is definitely present and is generating not only independent content, but also possible meanings and its own poetics. First of all, using the natural frequencies of the room as a pitch material enables the composer to accentuate the specific qualities of a particular hall without dwelling into speculative or program music realm. Instead, the pitches displayed and played become part of the hall itself, since they resonate and are “amplified” by the natural spatial qualities of the room. In such way, the piece acts as a scanning device, systematically sweeping through all the possible (main) room modes accentuating the natural nodes of the room and thereby defining the space itself. In this regard, it is of course very similar to Alvin Lucier’s piece *Vespers*, in which hand-held pulse generators are used by the blind-folded musicians to navigate themselves in space. In *Roomtone Variations* navigation happens on a discursive, listening level as the space itself is providing the frequencies that will be naturally enhanced and will therefore come to define the space in question.

A few words must be said about the projection of the score. By making the score clearly visible to the audience, Collins manages to enhance the presence of an extra-musical system. It is because of the projection that we begin to conceptually perceive the possible dichotomy between the room modes and their enhancement by the live performers. Additionally, the projected score defines the content of the piece for the audience in advance, just as the room modes predefine the content.

In its systematic approach towards extra-musical system²⁵ *Roomtone Variations* grasps the essence of what being in space actually feels – being fully engaged with the space not only in a retinal but also cochlear way. The room modes define the space and give us a tool of

²⁵ One could obviously argue that room modes are not extra-musical, because they are clearly connected to sonic experience of such physical fact. However, in its essence the actual room mode is a physical phenomenon primarily, therefore it can be read and perceived just as any other data set – in various contexts and mediums (sound in this case).

measuring its depth and sonic qualities; by accentuating these Collins also invites us to listen and react to the spaces around us.

Chapter III

Conclusion

As I have attempted to propose in this paper, any kind of non-musical context used in composed music can and should be articulated not only on its sonic qualities but also in terms of the additional contexts they generate. Allowing these new contexts to be read together with the sonic content creates new layers of meaning and interpretation, as both extra-musical and sonic worlds start to merge and influence each other. I have proposed that form and content can become unified with the formal and conceptual content if such an approach of composing and interpreting is to be used. Moreover, embracing the extra-musical contexts in music encodes new meanings onto the sound itself. As J. Attali writes:

“The musical message has no meaning, even if one artificially assigns a (necessarily rudimentary) signification to certain sounds. . . . In fact, the signification is far more complex. Although the value of a sound, like that of a phoneme, is determined by its relations with other sounds, it is, more than that, a relation embedded in a specific culture; the “meaning” of the musical message is expressed in a global fashion, in its operationality, and not in the juxtaposed signification of each sound element.”²⁶

There are multiple ways of approaching musical material in such a way; only a handful of them were discussed in this paper and I have concentrated on my work mainly, as it reflects a very important part of my artistic practice as a composer and sound artist. However, there are obviously many alternative approaches to the *extra-musical* all of which it would be impossible to mention here. In my opinion, what unites them all is crucially the systematic approach to both the conceptual elements and sonic material. Additionally, there usually is an intertextual discourse at play, not only with the worlds and realities outside of the piece, but also within the autonomous space of the piece itself. The form, the content, its manifestation – all appear to be ruled or at least discursively connected by employing a conceptual structure; such structure signifies itself as much as it signifies the content it is concerned with.

Finally, by engaging with these extra-musical structures in the form of multimedia, we predispose a potential space for the relational compositional discourse to emerge, where composed sounds and images or actions would be organised in a conceptually structured way. The multimedia aspect thus creates its own context in addition to the content it deals with. Although the piece might still have its own narrative, another, overarching metanarrative will inevitably emerge out of the combination of both musical and extra-musical contexts. This meta-narrative is what creates the space for our interpretation and perception of music works, as it is concerned not solely with form and content, but also with the reasons this particular form and content was used in the first place. Hence, the extra-musical system allows us to perceive conceptual sonic content to its fullest, by providing the composer and the listener with tools of dissecting and understanding all the interconnections between the articulated idea, its sonic manifestation and its final perception.

²⁶ Attali Jacques. *Noise: The Political Economy of Music*. Minneapolis: University of Minnesota Press, p.24, 1985

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